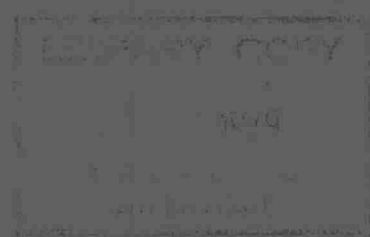


AN ENVIRONMENTAL STUDY  
OF THE  
INTERPROVINCIAL PIPELINE LTD.  
SARNIA-MONTREAL EXTENSION

October 1978

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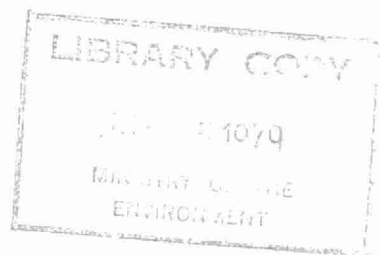
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AN ENVIRONMENTAL STUDY OF THE  
INTERPROVINCIAL PIPELINE LTD. SARNIA-MONTREAL EXTENSION

A MONITORING STUDY OF THE PLANNING, NEGOTIATION, CONSTRUCTION  
AND RESTORATION PHASES OF THE INTERPROVINCIAL PIPELINE EXTENSION  
WITH RECOMMENDATIONS FOR FUTURE PIPELINE DEVELOPMENTS.

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ENVIRONMENTAL APPROVALS BRANCH  
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OCTOBER, 1978

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# **1. INTRODUCTION: Background and need**

## **1.1 THE PROJECT**

IN 1973, CERTAIN ARAB NATIONS PLACED AN EMBARGO ON THE UNITED STATES AND OTHER COUNTRIES USING MIDDLE EAST CRUDE OIL. AS A CONSEQUENCE, THERE WAS A SHORTAGE OF CRUDE OIL IN NORTH AMERICA; ALTHOUGH THE SHORTAGE WAS PARTICULARLY ACUTE IN THE U.S., CANADA TOO FELT THE IMPACT.

THE MONTREAL REFINING CENTRE, WHICH SUPPLIES REFINED PETROLEUM PRODUCTS TO MOST OF QUEBEC AND PART OF EASTERN ONTARIO, WAS AFFECTED BY THIS EMBARGO AND A CRUDE OIL SHORTAGE RESULTED. ALTHOUGH EASTERN CANADA WAS ABLE TO COPE WITH SUPPLY PROBLEMS THROUGHOUT THE FALL AND WINTER OF 1973/74, ATTENTION HAD BEEN DRAWN TO THE VULNERABILITY OF THIS AREA IN TERMS OF FUTURE SUPPLY.

IN ORDER TO PROVIDE AN ALTERNATIVE SUPPLY OF CRUDE OIL TO MONTREAL, IN THE EVENT OF A FUTURE EMBARGO, AND TO REDUCE THE DEPENDENCE OF EASTERN CANADA ON FOREIGN CRUDE OIL, THE FEDERAL GOVERNMENT DETERMINED THAT THE EXTENSION OF THE EXISTING CANADIAN PIPELINE SYSTEM TO MONTREAL WAS IN THE NATIONAL INTEREST.

IN DECEMBER OF 1973, THE PRIME MINISTER OF CANADA APPOINTED A CO-ORDINATOR FOR A PIPELINE EXTENSION TO MONTREAL. PROVINCIAL AND FEDERAL GOVERNMENTS DISCUSSED THE MERITS OF AN ALL CANADIAN NORTHERN ROUTE FROM THE SAULT STE. MARIE AREA AS WELL AS ONE FROM SARNIA. ALTHOUGH THE FEDERAL ENERGY MINISTER ANNOUNCED THAT ALL CANADIAN CRUDE OIL PIPELINE WAS

DESIRABLE; SECURITY, TIMING AND COST CONSIDERATIONS DEMANDED THAT A 510-MILE PIPELINE BE BUILT FROM SARNIA TO MONTREAL. A STATEMENT TO THIS EFFECT WAS TABLED IN THE LEGISLATURE BY THE HONOURABLE ALAN GROSSMAN, PROVINCIAL SECRETARY FOR RESOURCES DEVELOPMENT, ON MARCH 7, 1974.

THE PROVINCE OF ONTARIO SUPPORTED THIS PIPELINE'S CONSTRUCTION AS IT WAS CONSIDERED TO BE IN THE NATIONAL INTEREST. HOWEVER, BECAUSE THE ONTARIO GOVERNMENT WAS CONCERNED FOR THE WELL-BEING OF THE LANDOWNERS AND ENVIRONMENT OF THE AREAS TO BE AFFECTED, AN INTERVENTION WAS FILED WITH THE NATIONAL ENERGY BOARD. THE MINISTRY OF ENERGY CO-ORDINATED AND CONDUCTED THE PROVINCIAL INTERVENTION. AT THE OTTAWA HEARINGS, DETAILED REQUESTS WERE MADE PERTAINING TO THE PLANNING AND CONSTRUCTION OF THE PROPOSED LINE. THESE REQUESTS CONCENTRATED TO SOME DEGREE ON THE PROTECTION OF AGRICULTURAL LANDS AND LANDS IN A NATURAL STATE. IN ADDITION, THE ISSUE OF THE RIGHTS OF LANDOWNERS ALONG THE ROUTE WAS ADDRESSED BOTH IN THE PROVINCIAL INTERVENTION AND IN THE CROSS-EXAMINATION OF THE APPLICANT'S WITNESSES AT THE HEARINGS.

THE PROVINCE ASKED BOTH THE BOARD AND THE APPLICANT TO VIGOROUSLY DEFEND THE RIGHTS OF LANDOWNERS. A NUMBER OF POINTS RELATING TO CONSISTENCY OF APPROACH, AGREEMENTS TO BE SIGNED, DISCLOSURE OF EASEMENT LOCATION, INFORMATION TO BE SUPPLIED, APPROACH BY RIGHT-OF-WAY PERSONNEL, AND OTHER SUCH FACTORS WERE RAISED DURING THE HEARINGS. THE PROVINCE SUBMITTED A DETAILED BRIEF CONTAINING PROVINCIAL REQUESTS RELATING TO SUGGESTED TERMS AND CONDITIONS OF EASEMENTS. THE FILED

INTERVENTION INCLUDED NEWLY DEVELOPED "GUIDELINES" WHICH ONTARIO SUBMITTED FOR ADOPTION BY THE NEB IN THE PROPOSED IPL CONSTRUCTION PROCESS. THESE GUIDELINES INCORPORATED CONCERNS OF ALL THE MINISTRIES INVOLVED: AGRICULTURE & FOOD, NATURAL RESOURCES, ENVIRONMENT, ENERGY AND CONSUMER AND COMMERCIAL RELATIONS. IN ADDITION, PROVINCIAL INSPECTORS WERE OFFERED TO MONITOR AND INFLUENCE THE CONSTRUCTION OF THE PIPELINE.

THE NATIONAL ENERGY BOARD DID NOT ACCEPT THE PROVINCIAL OFFER OF INSPECTORS, BUT SUBSEQUENT TO THE HEARINGS, MINISTRIES OF THE PROVINCE (AGRICULTURE & FOOD, NATURAL RESOURCES AND ENVIRONMENT) DETERMINED THAT THEY WOULD (UNOFFICIALLY) MONITOR THE PLANNING, CONSTRUCTION, AND RESTORATION PRACTICES AND PROCEDURES OF THE APPLICANT AND ITS AGENTS. THIS REPORT IS THE RESULT OF THE ONTARIO MINISTRY OF THE ENVIRONMENT'S MONITORING PROGRAM.

BECAUSE THE PROVINCIAL INSPECTORS HAD NO OFFICIAL STATUS, THIS MONITORING PROGRAM WAS INTENDED PRIMARILY: TO IDENTIFY FACTORS NEEDING BETTER DEFINITION OR CONTROL IN THE FUTURE; TO DRAW TO THE ATTENTION OF THE PROJECT MANAGERS APPARENT ERRORS OR OMISSIONS IN THEIR ACTIVITIES; AND, MOST IMPORTANT, TO ANALYZE THE EXTENT TO WHICH THE ENVIRONMENTAL GUIDELINES WERE EFFICIENTLY IMPLEMENTED. AN UNPUBLISHED INTERIM REPORT WHICH WE REFER TO AS "STAGE ONE STUDIES" IN THIS REPORT WAS PREPARED BY STAFF OF THE MINISTRY OF THE ENVIRONMENT, MAY 1976. THE REPORT WAS BASED ON FIELD VISITS AND INCLUDED A PHOTOGRAPHIC RECORD MADE DURING THE COURSE OF CONSTRUCTION. A FINAL VERSION OF THAT REPORT, WHICH IS INCLUDED HERE,



IDENTIFIES SOME PROBLEM AREAS AND RECOMMENDS POSSIBLE SOLUTIONS.

THE MAIN FOCUS OF THE STAGE ONE STUDY WAS THE PHYSICAL EFFECTS OF THE CONSTRUCTION PROCESS. THIS INVESTIGATION DEMONSTRATED THE NEED TO FURTHER INVESTIGATE LANDOWNER CONCERNS.

THUS, THE LANDOWNER STUDIES WERE INITIATED IN MAY OF 1976. WE HAVE CALLED THESE SECONDARY INVESTIGATIONS, 'STAGE TWO STUDIES'.

THE OBJECTIVES OF THESE STAGE TWO STUDIES WERE TO DETERMINE HOW EFFECTIVELY THE LANDOWNER AND ENVIRONMENTAL ISSUES RAISED BY THE PROVINCE AT THE NEB HEARINGS HAD BEEN ADDRESSED BY IPL, THEIR PROJECT MANAGERS, AND CONTRACTORS. ISSUES TO BE EXAMINED INCLUDED: WHAT INFORMATION LANDOWNERS HAD AVAILABLE; HOW WELL THEY UNDERSTOOD THEIR PARTICULAR RIGHTS; WHETHER NEGOTIATIONS WERE CARRIED OUT IN AN EASY AND STRAIGHTFORWARD MANNER; AND HOW THE CONTRACTORS HAD RESPONDED TO THE CONCERNS IDENTIFIED BY THE LANDOWNERS. BASED ON THESE FINDINGS, POSSIBLE CHANGES IN FUTURE PIPELINE PROJECT PROCEDURES COULD BE RECOMMENDED BY ONTARIO.

THIS REPORT IS PREPARED AND SUBMITTED AS AN AID FOR LEARNING ABOUT THE DEVELOPMENT TECHNOLOGY OF PIPELINE CONSTRUCTION AS IT APPLIES TO ENVIRONMENTAL, AGRICULTURAL & LANDOWNER CONCERNS. AS SUCH IT IS NOT INTENDED AS A CRITICISM PER SE OF ANY OF THE PARTIES INVOLVED. WE ARE HOPEFUL THAT ITS PUBLICATION WILL BENEFIT TO FUTURE UNDERTAKINGS.

## 1.2 THE PROJECT PROPONENT

IN JANUARY OF 1974, INTERPROVINCIAL PIPELINE LTD. (IPL) APPLIED TO THE NATIONAL ENERGY BOARD (NEB) FOR AUTHORIZATION TO CONSTRUCT A 30-INCH DIAMETER PIPELINE, TOGETHER WITH ALL APPURTENANCES, STORAGE AND PUMPING FACILITIES FROM SARNIA THROUGH TO MONTREAL.

IPL WAS INCORPORATED BY A SPECIAL ACT OF PARLIAMENT IN 1949 AND IS A COMPANY REGULATED BY THE NATIONAL ENERGY BOARD ACT. IPL OWNS AND OPERATES THE ONLY PIPELINE SYSTEM FOR THE TRANSPORTATION OF CRUDE OIL AND OTHER LIQUID HYDROCARBONS FROM WESTERN CANADA TO EASTERN CANADA. PRIOR TO 1975, THE INTERPROVINCIAL PIPELINE SYSTEM DELIVERED WESTERN CANADIAN CRUDE OIL TO CANADIAN REFINING CENTRES FROM EDMONTON EASTWARD THROUGH THE UNITED STATES INTO SARNIA TERMINATING AT PORT CREDIT (NEAR TORONTO), ONTARIO.

AS THE PIPELINE WAS ALREADY OPERATING BETWEEN SARNIA AND THE TORONTO AREA, IPL HAD A RIGHT-OF-WAY (ROW) FOR THIS PORTION OF THE PROPOSED EXTENSION. IPL HAD PLACED TWO LINES IN THIS 60 FOOT ROW: THE INITIAL ONE IN 1957 AND A LINE BUILT IN SEGMENTS BETWEEN 1967 AND 1973. A COMPLETELY NEW ROW WOULD BE REQUIRED FROM A POINT NEAR TORONTO TO MONTREAL.

## 1.3 THE NATIONAL ENERGY BOARD HEARINGS

THE NATIONAL ENERGY BOARD ACT WHICH EMPOWERS THE BOARD TO ACT IS FEDERALLY ADMINISTERED BY THE MINISTER FOR THE DEPARTMENT

OF ENERGY, MINES AND RESOURCES. THE NATIONAL ENERGY BOARD HEARINGS WERE HELD IN OTTAWA COMMENCING ON MAY 14TH, 1974, TO REVIEW THE APPLICATION OF IPL FOR A 'CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY' TO CONSTRUCT THE PIPELINE. IN CONSIDERING AN APPLICATION FOR AN ENERGY-RELATED SUPPLY OR PRODUCTION FACILITY, THE NEB, WHO HAVE JURISDICTIONAL RESPONSIBILITY FOR NATIONAL PIPELINES, MUST TAKE INTO ACCOUNT PRICE SETTING MARKET FACTORS, ECONOMIC FEASIBILITY, FINANCING AND THE PUBLIC INTEREST. A PROPONENT INDICATES IN THE APPLICATION DETAILS CONCERNING LAND ACQUISITION. OF INTEREST TO THE NEB IS, FOR INSTANCE, THE AMOUNT OF (ROW) LAND WHICH HAS BEEN OR WILL BE ACQUIRED BY OPTION AGREEMENTS AS COMPARED TO THOSE PROPERTIES WHICH MAY REQUIRE EXPROPRIATION IN GRANTING A 'CERTIFICATE' THE NEB GRANTS THE PROPONENT RIGHTS TO THE USE OF A 60-FOOT WIDE ROW ALONG THE PROPOSED FACILITY ROUTE.

SEVERAL INTERVENTIONS WERE MADE AT THE HEARINGS INCLUDING AS MENTIONED EARLIER, THE SUBMISSION FROM THE ONTARIO MINISTRY OF ENERGY ACTING FOR THE PROVINCE. THE ONTARIO INTERVENTION, CROSS-EXAMINATION AND ARGUMENT AT THE HEARING WERE PRIMARILY DIRECTED TOWARD ENVIRONMENTAL CONSIDERATIONS OF CONSTRUCTION AND RESTORATION IN THE PROVINCE.

ON MAY 22ND, THE HEARINGS WERE ADJOURNED DUE TO THE OBJECTIONS OF QUEBEC WITH REGARD TO THE ROUTING IN THAT PROVINCE. DURING THE ADJOURNMENT, IPL CONSIDERED AN ALTERNATE ROUTE IN QUEBEC WHICH WOULD MORE APPROPRIATELY TAKE INTO ACCOUNT QUEBEC'S ENVIRONMENTAL CONCERNS. THIS CHANGE

NECESSITATED CHANGES IN EASTERN ONTARIO AND A PREFERRED ROUTE IN ONTARIO WAS DETERMINED BETWEEN THE ONTARIO AND IPL REPRESENTATIVES GIVING DUE REGARD TO ENVIRONMENTAL AND AGRICULTURAL MATTERS.

ON APRIL 10TH, 1975, IPL ADVISED THAT BECHTEL CANADA LIMITED (BECHTEL) WOULD BE REPRESENTING IPL AS CONSTRUCTION AND ENVIRONMENTAL MANAGERS. THE HEARINGS WERE RECONVENED AND COMPLETED ON APRIL 11TH, 1975. THE BOARD ISSUED 'CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY PC-30' TO IPL ON MAY 31, 1975.

THIS WAS THE FIRST NEB HEARING WHERE CONSTRUCTION AND RESTORATION PROCEDURES WERE A MAJOR ISSUE. COMMITMENTS MADE BY THE CONSULTANTS THROUGH THEIR TESTIMONY WERE NOT CONSIDERED BINDING ON IPL UNLESS SO ORDERED BY THE BOARD. AS CERTAIN PRECEDENTS WERE BEING ESTABLISHED, THE NEB ISSUED ADDITIONAL ORDERS INTENDED TO PROTECT THE ENVIRONMENT AND LANDOWNER CONCERNS IDENTIFIED DURING THE HEARINGS BY THE PROVINCIAL REPRESENTATIVES. IN SEPTEMBER, FIVE MISCELLANEOUS ORDERS WERE ISSUED: MO-27-75, MO-28-75, MO-34-75, MO-35-75, AND MO-36-75.

#### 1.4 LAND EXPROPRIATION

AS MENTIONED EARLIER, SECTION 73 OF THE NATIONAL ENERGY BOARD ACT CONFERS ON ANY COMPANY WHICH HAS RECEIVED A CERTIFICATE FROM THE BOARD THE RIGHT TO TAKE A 60-FOOT WIDE ROW WITHOUT THE CONSENT OF THE OWNER OR WITHOUT LEAVE FROM ANY AUTHORITY.

HOWEVER, WHERE LANDS ADDITIONAL TO A 60-FOOT WIDTH ROW ARE REQUIRED (AS IN SPREADS 1-3, AND PARTS OF SPREADS 4-6 WHERE BENDS IN THE PIPE ROUTE OR PUMPING STATIONS REQUIRED ADDITIONAL LAND), THE NEB HAS THE AUTHORITY TO GRANT THE TAKING OF THESE LANDS UNDER THE RESTRICTIONS OF SECTION 74 OF THE NEB Act.

ON AUGUST 6, 1975, THE NEB ANNOUNCED ADDITIONAL HEARINGS FOR SEPTEMBER 4TH, 5TH AND 8TH IN SARNIA, KITCHENER AND OTTAWA RESPECTFULLY TO DISCUSS IPL'S TEMPORARY AND PERMANENT LAND REQUIREMENTS FOR THE PIPELINE. IPL'S APPLICATION UNDER SECTION 74 FOR AUTHORIZATION TO TAKE ADDITIONAL LANDS WAS MADE WITH RESPECT TO 51 SEPARATE PROPERTIES.

THE CONCERN OF THE BOARD IN REACHING DECISIONS UNDER SECTION 74 RESTED SOLELY ON THE QUESTION OF WHETHER THE RIGHTS WERE REQUIRED FOR THE EFFICIENT CONSTRUCTION OF THE PIPELINE. THE A NUMBER OF LANDOWNERS PRESENTED COMPLAINTS TO THE NEB AT THESE HEARINGS EVEN THOUGH MOST COMPLAINTS WERE REGARDED AS OUTSIDE THE TERMS OF REFERENCE OF THE HEARINGS.

THE BOARD RULED THAT NONE OF THE CONCERNS EXPRESSED BY LANDOWNERS RELATED DIRECTLY TO WHETHER THE TEMPORARY WORKING RIGHTS WERE REQUIRED FOR THE EFFICIENT CONSTRUCTION OF THE PIPELINE, AND GRANTED THE RIGHTS SOUGHT. THE BOARD DID, HOWEVER, IMPOSE A FEW CONDITIONS AS A RESULT OF PROBLEMS EXPRESSED BY THE LANDOWNERS.

AFTER THE HEARINGS, IPL MANAGED TO SETTLE WITH 43 OF THOSE PROPERTY OWNERS. THUS, EXPROPRIATION FOR TEMPORARY WORKING RIGHTS WAS DIRECTED TOWARDS EIGHT LANDOWNERS.

THE POWERS OF EXPROPRIATION ARE GOVERNED BY THE PROVISIONS OF THE RAILWAY ACT. THE MATTER OF COMPENSATION IS DETERMINED IN ONTARIO BY A DISTRICT OR COUNTY COURT JUDGE AS ARBITRATOR. COMPENSATION COURTS WERE HELD IN VARIOUS LOCATIONS, INCLUDING BELLEVILLE AND CORNWALL.

THE COMPANY DIVIDED THE SARNIA TO MONTREAL ROUTE INTO SEVEN CONSTRUCTION AREAS CALLED "SPREADS". VARIOUS CONTRACTORS BID ON THE CONSTRUCTION CONTRACT FOR EACH SPREAD. FIGURE 1 SHOWS THE SPREAD AREAS, AND SUCCESSFUL CONTRACTORS FOR EACH SPREAD.

#### 1.5 THE ROLE AND INTERACTION OF THE NEB, THE APPLICANT AND THE PROVINCE

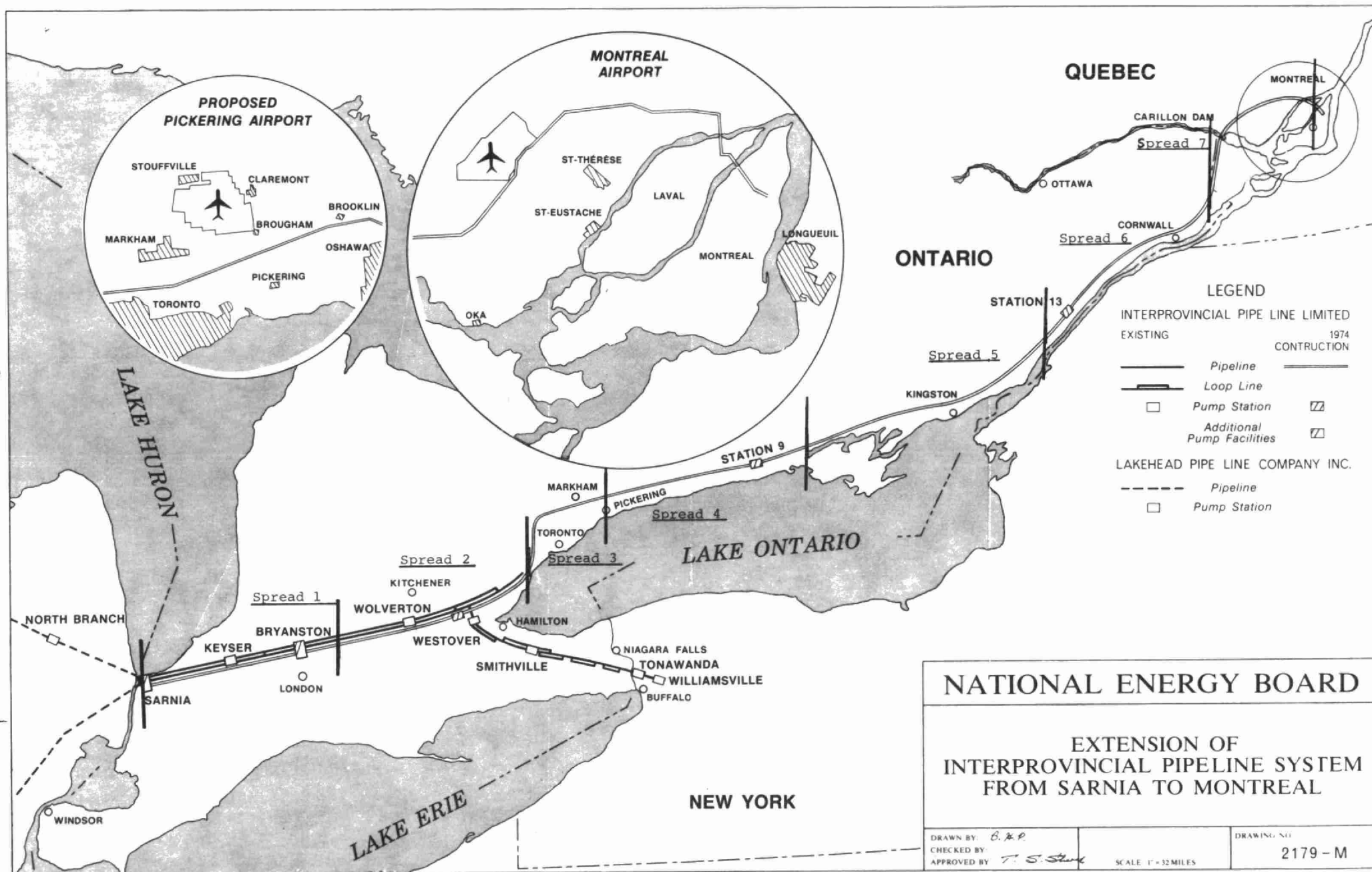
AT THE TIME OF THE NATIONAL ENERGY BOARD HEARINGS IN OTTAWA, THE PROVINCIAL INTERVENTION INCLUDED TWO MAJOR ENVIRONMENTAL SUBMISSIONS, THE SUBMISSION OF ENVIRONMENTAL GUIDELINES AND THE OFFER TO PROVIDE ENVIRONMENTAL INSPECTORS.

THE GUIDELINES WERE PRESENTED TO THE BOARD AS PROVINCIAL POLICY COVERING ENVIRONMENTAL AND AGRICULTURAL ISSUES. THESE GUIDELINES INDICATED THAT CERTAIN INFORMATION SHOULD BE FILED IN ADVANCE OF MAKING ANY DECISION ON FINAL PIPELINE ROUTING AND THAT SUBSEQUENTLY, CONSTRUCTION SHOULD BE CARRIED OUT WITH DUE REGARD TO CERTAIN SPECIFIC CONCERNS.

FIGURE I

<u>SPREAD #</u>	<u>AREA</u>	<u>LENGTH</u>	<u>CONTRACTOR</u>
1	SARNIA TO INGERSOLL	APPROX. 76 MILES	BANNISTER PIPELINE LTD.
2	INGERSOLL TO MISSISSAUGA	APPROX. 80 MILES	MARINE-SUMMERVILLE (MARINE PIPELINE) CONSTRUCTION CANADA LTD., ROBERT B. SUMMERVILLE Co. LTD.
3	MISSISSAUGA TO PICKERING	APPROX. 25 MILES	BANNISTER GENERAL
4	PICKERING TO TRENTON	APPROX. 87 MILES	BANNISTER PIPELINE LTD.
5	TRENTON TO BROCKVILLE	APPROX. 90 MILES	H.C. PRICE CANADA LTD.
6	BROCKVILLE TO QUEBEC BORDER	APPROX. 90 MILES	LORAN INTERNATIONAL LTD.
7	QUEBEC BORDER TO MONTREAL	APPROX. 80 MILES	UNIVERSAL PIPELINE ENTERPRISES LTD.

CONSTRUCTION BEGAN SIMULTANEOUSLY ON MOST SPREADS, THE 3RD OF  
SEPTEMBER 1975.





AT THE TIME OF THE HEARING, THE PROVINCE WAS INFORMED BY BOTH THE APPLICANT AND IT'S ENVIRONMENTAL CONSULTANTS THAT IT WAS THE CONTRACTOR'S RESPONSIBILITY TO DEVELOP SPECIFIC CONSTRUCTION METHODS. THE APPLICANT DID NOT WISH TO HAVE THE PROVINCE OR THE ENVIRONMENTAL INSPECTORS SPECIFYING PROCEDURES TO BE USED IN THE FIELD. APPARENTLY, THIS PROCEDURE HAS A HISTORICAL BASIS WITH ITS ORIGINS IN THE BIDDING FOR A JOB. A CONTRACTOR WOULD BE INCLINED TO CONSIDER THE CONSTRUCTION METHODS USED IN THE PAST AND WOULD WANT TO APPLY THESE TO THEIR NEXT JOB. IF PERSONS OR ORGANIZATIONS ATTEMPTED TO CHANGE THESE METHODS IN THE FIELD, THE MANPOWER AND EQUIPMENT AND AS A RESULT THE COSTS INCURRED, MIGHT NOT COINCIDE WITH THOSE ON WHICH THE CONTRACTOR HAD BASED HIS ESTIMATE. THUS, FIELD CONFLICT MIGHT ARISE DURING CONSTRUCTION. IN ATTEMPTING, TO RECOGNIZE, UNDERSTAND AND ACCEPT CURRENT PRACTICES, REPRESENTATIVES OF THE PROVINCE MADE IT CLEAR AT THE HEARING THAT IT WAS EXPECTED THAT THE CONSULTANTS FOR THE APPLICANT WOULD INFORM THE CONTRACTORS THAT ENVIRONMENTAL CONSIDERATIONS WERE TO PLAY A SIGNIFICANT ROLE IN THEIR BIDDING AND THE SUBSEQUENT DECISION-MAKING ON WHICH CONSTRUCTION AND RESTORATION PROCEDURES WOULD BE BASED. IT WAS EXPECTED THAT THE PROVINCIAL GUIDELINES WOULD ASSIST IN ALERTING CONTRACTORS AND THE APPLICANT TO THE RELEVANT FACTORS.

THE SECOND IMPORTANT POINT MADE BY THE PROVINCE WAS THAT INSPECTORS COULD BE SUPPLIED AT THE EXPENSE OF THE PROVINCE. THESE INSPECTORS WOULD HAVE BEEN PERMANENT REPRESENTATIVES TO THE CONSTRUCTION SPREAD CHARGED WITH SEEING THAT ENVIRONMENTAL AND AGRICULTURAL CRITERIA WERE MET. IT WAS INTENDED THAT THE

INSPECTORS HAVE EITHER ENVIRONMENTAL OR AGRICULTURAL BACKGROUND AND THAT THEY LIAISE WITH OTHER ONTARIO MINISTRIES FOR ADDITIONAL EXPERTISE ON PARTICULAR ISSUES AS THEY AROSE. THUS, IN EFFECT, A TEAM COULD BE FIELDDED, UPON VERY SHORT NOTICE. DISCUSSIONS WITH BOARD STAFF PRIOR TO THE HEARINGS INDICATED THAT THE BOARD WOULD LIKELY BE RELUCTANT TO ALLOW PROVINCIAL INSPECTORS ON THE SPREADS WITH THE AUTHORITY TO CHANGE OR ALTER CONSTRUCTION PROCEDURES. THE BOARD, HAVING JURISDICTION, INDICATED THAT IF ANY INSPECTORS WERE PLACED IN THE FIELD, THEY WOULD LIKELY HAVE TO COME UNDER BOARD JURISDICTION.

AFTER THE HEARINGS, AND UPON THE ISSUANCE OF BOARD ORDERS, IT BECAME EVIDENT THAT WHILE THE BOARD WAS GREATLY INFLUENCED AND ASSISTED BY THE PROVINCIAL SUBMISSION, THE BOARD WAS NOT GOING TO ADOPT THE PROVINCIAL GUIDELINES PER SE. NEITHER DID THE BOARD ACCEPT THE OFFER OF PROVINCIAL INSPECTORS. INSTEAD, THE BOARD ISSUED SPECIFIC ORDERS FOR ADDITIONAL STUDIES TO BE CARRIED OUT AND SUBSEQUENTLY ORDERED THAT ALL UNDERTAKINGS MADE BY THE APPLICANT AT THE TIME OF THE HEARINGS, AND IN SUBSEQUENT SUBMISSIONS WOULD BE CONSIDERED BINDING. THE BOARD WOULD USE ITS OWN INSPECTORS AS ENVIRONMENTAL MONITORS.

BECHTEL CANADA LIMITED, IN DEVELOPING THEIR ENVIRONMENTAL SPECIFICATIONS, WHICH WERE TO BE PART OF THE BID PACKAGE, INCLUDED MANY OF THE CONCERNS THAT THE PROVINCE HAD REFERENCED IN THEIR GUIDELINES. THUS, EVEN THOUGH NOT FORMALLY ADOPTED BY THE BOARD, THE PROVINCIAL GUIDELINES TO A GREAT EXTENT BECAME BINDING ON THE CONTRACTORS DUE TO THE FACT THAT

BECAUSE THESE SPECIFICATIONS WERE FILED WITH THE BOARD, THEY WERE CONSIDERED TO BE A BINDING UNDERTAKING (NEB ORDER MO-36-75). IT WOULD THEN BE ENFORCED BY THE BOARD, AS, INDEED, IT WOULD BE THE BOARD'S RESPONSIBILITY TO SEE THAT ALL ORDERS WERE FOLLOWED.

TO ENSURE COMPLIANCE WITH ORDERS, THE BOARD PLACED ONE INSPECTOR PER SPREAD IN THE FIELD. THE DUTIES OF THESE INSPECTORS WERE TO INCLUDE OBSERVATION OF ALL ASPECTS OF CONSTRUCTION THAT WOULD COME UNDER THE BOARD'S JURISDICTION. THUS, THEY WOULD BE CONCERNED ABOUT THE ENGINEERING, SAFETY, AND TECHNICAL ASPECTS AS WELL AS ENVIRONMENTAL PROCEDURES. IT IS OUR UNDERSTANDING THAT THESE INSPECTORS HAD NOT PREVIOUSLY DEALT WITH ENVIRONMENTAL CONCERNS. THUS, FOR THEM, IT WAS A NEW EXPERIENCE WHICH UNDOUBTEDLY SHOULD HAVE BEEN SUPPORTED BY SOME INITIAL TRAINING PRIOR TO THE CONSTRUCTION.

ONCE CONSTRUCTION BEGAN, THESE INSPECTORS WORKED NORMAL OFFICE HOURS (ABOUT 40 HOURS PER WEEK) NOTWITHSTANDING THE FACT THAT PIPELINE CONSTRUCTION OFTEN WENT ON FOR SIX OR SEVEN DAYS, 70 HOURS, SOMETIMES MORE PER WEEK. THUS, THE BOARD INSPECTORS WERE NOT ON SITE AT ALL TIMES DURING CONSTRUCTION. IN CONVERSATIONS WITH OTHER GOVERNMENT PERSONNEL, WE FOUND (THROUGH CONTACTS, QUESTIONS, AND ADVICE OFFERED), THAT THE NEB INSPECTORS DID NOT HAVE A HIGH PROFILE ON ENVIRONMENTAL MATTERS. HEAD OFFICE OF THE MINISTRY OF THE ENVIRONMENT DID NOT RECEIVE ANY INQUIRIES, QUESTIONS OR COMMENTS FROM THESE INSPECTORS ON ANY ISSUE IN THE FIELD, EVEN THOUGH WE WERE AWARE THAT THERE WERE MANY. THE PROVINCE

FELT THAT THE NEB SHOULD HAVE SUPPLIED INSPECTORS WHOSE SOLE RESPONSIBILITY WOULD HAVE BEEN ENVIRONMENTAL PROTECTION. A GREATER NUMBER OF INSPECTORS, WAS ALSO CONSIDERED NECESSARY FOR ADEQUATE COVERAGE OF THE LINE. WE FELT THAT THE BOARD COULD IMPROVE ITS RESPONSE TIME TO FIELD COMPLAINTS. FOR EXAMPLE, ACTION WAS NOT FORTHCOMING WITH THE SPREAD 5 AND 6 AGRICULTURAL PROBLEMS IDENTIFIED IN THIS REPORT UNTIL WELL AFTER THOSE PROBLEMS WERE RECOGNIZED IN THE FIELD.

DUE TO THE EXTREME WEATHER CONDITIONS IN THE SUMMER OF 1975 IN EASTERN ONTARIO, THE MAJOR CONSTRUCTION PROBLEMS WERE ENCOUNTERED ON THE AGRICULTURAL LANDS IN SPREADS 5 AND 6. COMPLAINTS WERE RECEIVED BY BOTH THE BOARD AND THE PROVINCE FROM LOCAL FARMERS AND SPECIAL EFFORTS WERE MADE BY THE PROVINCE TO RESPOND TO THESE PROBLEMS. AS A CONSEQUENCE OF AN ARRANGEMENT MADE WITH THE NEB AT THE TIME OF ESCALATING LANDOWNER COMPLAINTS, THE ONTARIO MINISTRY OF AGRICULTURE AND FOOD INSTRUCTED THEIR FIELD PERSONNEL TO CARRY OUT FREQUENT FIELD INSPECTIONS TO ASSESS THE SITUATION AND TO IDENTIFY PROBLEMS IN ADVANCE OF CONSTRUCTION.

THAT MINISTRY ALSO LENT EXPERTISE TO THE FEDERAL DEPARTMENT OF AGRICULTURE WHO WERE CALLED IN BY THE BOARD TO PREPARE GUIDELINES FOR CONSTRUCTION AND RESTORATION OF THE COMPLETE RIGHT-OF-WAY THROUGH AGRICULTURAL LANDS. THE NECESSITY FOR INVOLVING BOTH THE FEDERAL AND PROVINCIAL MINISTRIES AT THAT LATE DATE INDICATED THAT THERE WAS SOME CONSIDERABLE LACK OF KNOWLEDGE BY BOTH THE BOARD AND THE APPLICANT ON AGRICULTURAL PROBLEMS. THIS OCCURRED, IN SPITE OF THE FACT THAT THE BOARD

WAS ALERTED, AT THE TIME OF THE HEARINGS, TO THE LIMITED RESEARCH IN THE AGRICULTURAL FIELD. IT IS RECOGNIZED THAT THE WEATHER CONDITIONS WERE SOMEWHAT UNUSUAL FOR THIS TIME OF YEAR, HOWEVER, IT WOULD APPEAR THAT THERE WAS VIRTUALLY NO CONTINGENCY PLANNING FOR THE CONSTRUCTION.

THERE IS SOME CONCERN ABOUT THE MEAGRE INFORMATION FLOW FROM THE BOARD TO THE INTERVENORS. ALTHOUGH THE BOARD DID REQUIRE, THROUGH ITS ORDER MO-27-75, THAT THE COMPANY FILE CERTAIN ADDITIONAL INFORMATION AND REPORTS, THERE HAS NEVER BEEN A STATEMENT ISSUED BY THE BOARD TO ASSIST THE INTERVENORS IN UNDERSTANDING WHAT THE BOARD AGREED TO AND WHAT THE APPLICANT WAS REQUIRED TO CARRY OUT. IN ADDITION, ACCORDING TO MOE RECORDS, THE REPORTS ORDERED UNDER OC-30, #4, WERE NEVER RECEIVED BY THE PROVINCE. COMMENTS ON THESE REPORTS BY THE BOARD COULD HAVE BEEN INTERESTING AND HELPFUL.

COPIES OF THE REPORTS PREPARED UNDER THE ORDER MO-27-75 WERE RECEIVED FROM THE APPLICANT. THIS MINISTRY WAS GIVEN TO UNDERSTAND THAT THESE DOCUMENTS REPRESENTED THE "PHASE II" THAT WAS DISCUSSED BY THE CONSULTANTS, F.F. SLANEY, AT THE TIME OF THE HEARINGS. PHASE II STUDIES WERE TO PROVIDE FURTHER ENVIRONMENTAL INFORMATION AND IDENTIFY DETAILED MEASURES TO PROTECT THE AGRICULTURAL LANDS AND THE NATURAL ENVIRONMENT DURING THE CONSTRUCTION. OUR INTERPRETATION OF THE REQUIREMENTS FOR PHASE II DIFFERED WITH THE PROJECT MANAGER, BECHTEL CANADA LTD. THIS CONCERN ABOUT THE INADEQUACY OF PHASE II STUDIES WAS CONVEYED TO BOTH THE BOARD STAFF AND TO BECHTEL. HOWEVER, THE REPORTS DID NOT CHANGE, BECAUSE

THE NEB, WHICH HAS THE POWER TO REQUIRE BETTER STUDIES, DID NOT DO SO. THE PROVINCE DID NOT HAVE THE AUTHORITY TO REQUIRE ANY INFORMATION WHICH WAS IN ADDITION TO THAT REQUIRED BY THE BOARD. THUS, IN OUR OPINION, THE DETAILED WORK REQUIRED FOR A PROPER 'PHASE II STUDY' WAS NEVER UNDERTAKEN OR DOCUMENTED.

ONE OF THE OTHER CRITICAL ORDER ISSUED BY THE BOARD WAS MO-36-75, WHICH STATED:

"IT IS ORDERED THAT INTERPROVINCIAL SHALL CAUSE THE IMPLEMENTATION OF ITS POLICIES, PRACTICES AND PROCEDURES FOR THE PROTECTION OF THE ENVIRONMENT, FARMLAND AND DRAINAGE, AS STATED IN EVIDENCE BEFORE THE BOARD AND AS SET OUT IN ITS REPORTS, INCLUDING THE RECOMMENDATIONS OF ITS CONSULTANTS, ALL FILED WITH THE BOARD PURSUANT TO THE REQUIREMENTS MORE PARTICULARLY SET OUT IN SAID ORDER MO-27-75..."

IT IS OUR INTERPRETATION THAT THIS IS THE ORDER THAT COVERS THE REQUIREMENT THAT ALL UNDERTAKINGS MADE BY THE COMPANY BE FOLLOWED. NO COMPLETE LISTING OF UNDERTAKINGS WHICH THE BOARD CONSIDERED BINDING UPON THE APPLICANTS WAS MADE AVAILABLE. SUCH A LIST WOULD UNDOUBTEDLY HAVE BEEN NECESSARY FOR THE BOARD'S OWN INFORMATION AND INSPECTION TO DETERMINE THE FULL MEANING OF MO-36-75.

**2. The Ministry of the Environment  
Monitoring studies:  
BACKGROUND and INTRODUCTION**

AS HAS BEEN MENTIONED, AT THE TIME OF THE NEB HEARINGS, THE MINISTER OF ENERGY INTERVENED ON BEHALF OF ALL THE INVOLVED MINISTRIES OF THE PROVINCE AND TABLED A NUMBER OF DETAILED REQUESTS PERTAINING TO PIPELINE CONSTRUCTION. THE SUBMISSION FOCUSED ON THE ENVIRONMENT, PARTICULARLY AGRICULTURAL LAND AND LAND IN A NATURAL STATE. THE RIGHTS OF LANDOWNERS ALONG THE ROUTE WERE ALSO EMPHASIZED IN THE INTERVENTION AND IN THE CROSS-EXAMINATION OF THE APPLICANT'S WITNESSES BY PROVINCIAL COUNSEL. POINTS RELATING TO CONSISTENCY OF APPROACH BY IPL LAND ACQUISITION STAFF, AGREEMENTS TO BE SIGNED, AND INFORMATION TO BE SUPPLIED TO LANDOWNERS, WERE RAISED DURING THE HEARINGS. THE PROVINCE ALSO SUBMITTED A DETAILED BRIEF CONTAINING PROVINCIAL REQUESTS RELATING TO SUGGESTED TERMS AND CONDITIONS OF THE EASEMENTS.

THE MINISTRY OF THE ENVIRONMENT UNOFFICIALLY MONITORED THE PLANNING, CONSTRUCTION AND RESTORATION PROCEDURES IN THE IPL PROJECT AS CARRIED OUT BY THE APPLICANT AND ITS AGENTS. THIS MONITORING PROGRAM HAS BEEN UNDERTAKEN IN TWO MAJOR STAGES. THESE TWO STAGES ARE INCLUDED IN THIS REPORT AS THE MAJOR PARTS OF THE BODY OF THE STUDY. A FINAL SUMMARY DISCUSSION, CONCLUSIONS, RECOMMENDATIONS AND AN APPENDIX WITH BACKGROUND MATERIAL ENCOMPASS THE REMAINDER OF THE STUDY.

THE FIRST STAGE CONCENTRATED ON ENVIRONMENTAL ASPECTS OF THE PLANNING AND CONSTRUCTION PHASES OF THE PROJECT. THIS STAGE DEALT CHIEFLY WITH THE PHYSICAL EFFECTS OF THE PROJECT ON WATERCOURSES AND SENSITIVE AREAS. IT ADDRESSED GENERAL EFFECTS ON AGRICULTURAL LANDS EITHER DIRECTLY (IN A FEW CASES) OR BY IMPLICATION.

STAGE TWO OF THE STUDY WAS PROMPTED BY THE RESULTS OF THE INITIAL STAGE. DURING THE FIRST STAGE, CERTAIN INFRACTIONS OF THE CONDITIONS AGREED TO UNDER TESTIMONY AND CROSS-EXAMINATION BEFORE THE NEB WERE OBSERVED. IT BECAME APPARENT THAT SOME OF THE PROBLEMS IDENTIFIED WERE SIGNIFICANT AND OCCURRED WITH SOME FREQUENCY. HOWEVER, WHEN THE MINISTRY EXPRESSED CONCERN TO THE MANAGERS OF THE PROJECT (BECHTEL CANADA LTD.), ASSURANCE WAS GIVEN THAT THE CASES IDENTIFIED WERE UNIQUE AND NOT REGULAR OCCURRENCES. AS THE STAGE ONE MOE STUDY SEEMED TO CONTRADICT THESE ASSURANCES, A STAGE TWO STUDY OF THE PROJECT WAS INITIATED.

SECOND STAGE STUDIES WERE ACCOMPLISHED BY A SERIES OF IN-DEPTH PERSONAL INTERVIEWS WITH A RANDOM YET REPRESENTATIVE SAMPLE OF LANDOWNERS ALONG THE PIPELINE ROUTE. IT WAS FELT THAT BY INTERVIEWING LANDOWNERS, THE STUDY COULD ACCOMPLISH TWO GOALS. FIRST, AN IDEA OF PROBLEMS ASSOCIATED WITH LANDOWNER CONCERNS AND RIGHTS, AS RELATED TO THE ROLE AND RESPONSIBILITIES OF ALL PARTIES INVOLVED COULD BE IDENTIFIED.

SECONDLY, INFORMATION OBTAINED DURING THIS STAGE COULD BE USED IN THE ANALYSIS OF THE RESULTS OF OUR OWN PREVIOUS INVESTIGATIONS. THE OBJECTIVES OF THIS REPORT ARE:



- A) THE IDENTIFICATION OF PROBLEMS WHICH OCCURRED IN THE VARIOUS PHASES OF THE IPL PROJECT.
- B) AN ANALYSIS OF THE EXTENT TO WHICH PROVINCIAL CONCERNS AS EXPRESSED DURING THE NEB HEARINGS AND OUTLINED IN THE OFFICIAL PROVINCIAL INTERVENTION WERE PROPERLY ADDRESSED.
- C) A COMPARISON OF THE ACTUAL OPERATIONS INVOLVED IN THE PROJECT'S IMPLEMENTATION WITH THE RESPONSIBILITIES OF THE PROPONENT AND ITS AGENTS.
- D) TO MAKE RECOMMENDATIONS WITH RESPECT TO IMPROVING THE MANAGEMENT, PLANNING, CONSTRUCTION AND RESTORATION OF PIPELINE FACILITIES SO THAT PROBLEMS IDENTIFIED IN THIS CASE STUDY MIGHT BE AVOIDED ON FUTURE PROJECTS.

## 2.1 STAGE ONE STUDIES

### THE PHYSICAL ENVIRONMENTAL ASPECTS OF THE PLANNING AND CONSTRUCTION OF THE IPL SARNIA TO MONTREAL EXTENSION 1975/77

STAGE ONE STUDIES WERE UNDERTAKEN DURING THE CONSTRUCTION PHASE, BUT THE STUDIES INCLUDE AN ANALYSIS OF THE INITIAL PROJECT PLANNING IN RELATION TO LATER PHASES OF WORK. THE INTENT OF THE INITIAL PROVINCIAL INTERVENTION AND THIS PART OF THE INFORMAL INVESTIGATIONS WAS TO IDENTIFY AND ENCOURAGE MINIMIZATION OF THE ENVIRONMENTAL IMPACTS ASSOCIATED WITH THIS PIPELINE DEVELOPMENT.

THIS SECTION OF THE REPORT SUMMARIZES THE MINISTRY'S OBSERVATIONS AND FINDINGS SINCE THE TIME THE NATIONAL ENERGY BOARD ORDERS WERE ISSUED, AND INCLUDES REFERENCES TO SITE VISITS MADE DURING AND AFTER THE CONSTRUCTION PERIOD. THE SECTION HIGHLIGHTS THREE SPECIFIC AREAS OF CONCERN: ENVIRONMENTAL PROBLEMS OBSERVED IN THE FIELD, LESSONS LEARNED THROUGH SUCH OBSERVATIONS WITH RECOMMENDATIONS FOR ALTERNATE PROCEDURES, AND THE RELATIONSHIPS OF OUR FINDINGS TO BOARD ORDERS AND/OR PROVINCIAL POLICIES.

JUST AFTER HEARINGS WERE COMPLETED, THE MINISTRY OF THE ENVIRONMENT QUESTIONED THE ONTARIO MINISTRY OF ENERGY ON WHICH UNDERTAKINGS MADE AT THE HEARINGS WOULD BE BINDING ON THE APPLICANT (INTERPROVINCIAL PIPELINE LIMITED). IT WAS REPORTED BY THAT MINISTRY THAT IN ITS OPINION ONLY SPECIFIC ORDERS ISSUED BY THE BOARD WERE LEGALLY BINDING THUS ANY UNDERTAKINGS MADE IN THE REPORTS, AT THE HEARINGS OR IN THE

SPECIFICATIONS WERE NOT BINDING UNLESS SO ORDERED. Fortunately, the NEB issued the Order MO-36-75 which was quoted on page 16 of this report.

Thus, it was interpreted, that the specifications (included in this report as Appendix B) issued to contractors would be binding under this Order. It was also agreed with the Ministry of Energy, that every attempt should be made by the Ministry of the Environment to resolve problems and concerns directly with the applicant or the project manager. Failing such resolution, the concerns would have to be brought to the Board's attention.

The Provincial concern for the protection of the natural environment and agricultural lands, was the reason that the Provincial "Environmental, Agricultural and Resources Guidelines for the Construction and Operation of the Interprovincial Pipeline Limited Pipeline in Ontario" (refer to Appendix A) were developed.

Head Office and Regional staff, MOE, commenced visits to all spreads in early September 1975. On many occasions, they were accompanied by Bechtel Environmental Inspectors so that progress could be discussed, problems identified and prompt action taken. The co-operation of the Bechtel Environmental personnel with the Ministry of the Environment was extremely good. However, their good intentions were occasionally defeated by unco-operative contractors and/or unusual or extreme weather conditions.

THE ONTARIO MINISTRY OF AGRICULTURE AND FOOD ALSO SIMILARLY MADE INSPECTIONS IN AREAS OF AGRICULTURAL CONCERN AND APPARENTLY EXPERIENCED COMPARABLE CO-OPERATION.

THERE WERE TWO IMPORTANT OBJECTIVES TO THE FIELD VISITS WHICH SHOULD BE NOTED. THE FIRST WAS TO IDENTIFY THE EXTENT TO WHICH THE CONTRACTORS MET THE COMMITMENTS MADE BY INTER-PROVINCIAL PIPELINE LTD. THE SECOND WAS TO IDENTIFY, FOR FUTURE REFERENCE, ANY ERRORS OR DEFICIENCIES IN PRESENT PRACTICES WHICH MIGHT BE IMPROVED OR RESOLVED THROUGH CHANGES IN EXISTING TECHNIQUES.

#### 2.1.1 GENERAL OBSERVATIONS

THE FOLLOWING RECORDS IN SOME DETAIL THE PLANNING, CONSTRUCTION AND RESTORATION PROBLEMS OBSERVED BY THE MINISTRY OF THE ENVIRONMENT AND, WHERE POSSIBLE, SUGGESTS POSSIBLE SOLUTIONS FOR FUTURE REFERENCE.

THE APPLICANT (IPL) WAS RELUCTANT TO COMMENCE THE DETAILED PHASE II STUDIES REFERRED TO EARLIER UNTIL THERE WAS A FINAL DECISION THAT THE LINE WOULD BE BUILT. THE DECISION TO CONSTRUCT WAS EVENTUALLY BASED ON CERTAIN FINANCIAL GUARANTEES MADE BY THE FEDERAL GOVERNMENT. AS A RESULT, ONCE THE CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY WAS ISSUED BY THE NATIONAL ENERGY BOARD ON MAY 21, 1975, ONLY THREE MONTHS WERE AVAILABLE FOR THESE DETAILED (PHASE II) ENVIRONMENTAL STUDIES AS CONSTRUCTION WAS TO BEGIN ON SEPTEMBER 1, 1975. THERE WAS SOME URGENCY (APPARENTLY ON THE PART OF THE FEDERAL GOVERNMENT RELATED TO

COST AND SECURITY) TO HAVE THE LINE IN OPERATION IN THE SPRING OF 1976. THE BOARD ORDERS, WHICH REQUIRED SPECIAL STUDIES ON CERTAIN ASPECTS, COUPLED WITH THE TIMING CONSTRAINT, MEANT THAT ONLY GENERAL SPECIFICATIONS, STUDIES AND REPORTS COULD BE PRODUCED. WRITTEN INSTRUCTIONS FOR RESTORATION, CALLED LINE LISTS, TENDED TO BE THE ONLY SPECIFIC SITE INFORMATION AVAILABLE. IT OFTEN APPEARED THAT THESE INSTRUCTIONS WERE CHANGED OR NOT FOLLOWED. BECAUSE OF THE OVERALL LACK OF EMPHASIS ON CONSTRUCTION AND RESTORATION TECHNIQUES DURING THE PLANNING OF THE PIPELINE, A NUMBER OF FIELD PROBLEMS AROSE, THE SCOPE AND IMPORTANCE OF WHICH ONLY BECAME CLEAR AS WORK PROCEEDED. THE PROBLEMS INCLUDED A LACK OF UNDERSTANDING BY CONTRACTORS OF ENVIRONMENTALLY-SOUND CONSTRUCTION PROCEDURES.

AS NOTED IN THE SPECIFICATION MANUAL PREPARED BY BECHTEL CANADA FOR INTERPROVINCIAL (MAY 1975), PART 6, ENTITLED "ENVIRONMENTAL CONSIDERATIONS", THE CONTRACTOR WAS REQUIRED TO CARRY OUT CERTAIN PROCEDURES AND WAS RESPONSIBLE FOR CERTAIN DESIGN ASPECTS. THESE INCLUDED SUCH FACTORS AS: CONCERN FOR PRUNING OF TREES, STABILIZING "STEEP BANKS", USE OF "EROSION CONTROL MEASURES", AND SUBMISSION OF DETAILED "SCHEDULES, CONSTRUCTION METHODS, EQUIPMENT AND PROCEDURES" FOR CERTAIN WATERCOURSE CROSSINGS, (REFER TO APPENDIX B). HOWEVER, WITHOUT ADEQUATE LEAD TIME (I.E., CONTRACTOR OR REPRESENTATIVES APPEARING ON SCENE ONLY A FEW WEEKS PRIOR TO CONSTRUCTION TO DEVELOP PROCEDURES), AND ENVIRONMENTAL STAFF, IT WAS UNDOUBTEDLY DIFFICULT IF NOT IMPOSSIBLE FOR THE

CONTRACTOR TO CARRY OUT THE ADDITIONAL WORK REQUIRED; TO ESTIMATE ADDITIONAL COSTS IMPLIED BY THE ENVIRONMENTAL SPECIFICATIONS OR TO CHANGE PROCEDURES WHICH MAY HAVE BEEN CONSIDERED AS "STANDARD" ON PREVIOUS PIPELINE CONSTRUCTION. BECHTEL DID INFORM THE CONTRACTOR THAT NON-ROUTINE WORK CAUSED BY ENVIRONMENTAL CONCERNS WOULD BE PAID FOR AS EXTRA COST. IT IS DIFFICULT TO DETERMINE WHETHER THE CONTRACTORS, IN PREPARING THEIR BIDS, FULLY APPRECIATED THE REQUIRED CHANGES IN WORK HABITS OR THE ADDITIONAL EFFORTS THAT MIGHT BE NECESSARY TO APPROPRIATELY DEAL WITH REQUIREMENTS OF THE BOARD AND REQUESTS OF THE PROVINCE.

CONSTRUCTION PLANS AND PROCEDURES WERE OFTEN DETERMINED WITHOUT ADEQUATE NOTICE OR FIELD REPRESENTATION BY PROVINCIAL GOVERNMENT MINISTRIES AS WAS REQUIRED IN THE SPECIFICATIONS MANUAL (APPENDIX B, EC-9). FURTHER TO THIS, THERE WERE NO ADEQUATE SITE SPECIFIC PLANS AND PROCEDURES PREPARED FOR WATERCOURSE CROSSINGS. AS A RESULT, THE CONTRACTOR WAS NOT PROPERLY INFORMED PRIOR TO ACTUAL CONSTRUCTION.

THE CONTRACTORS WERE RELIED UPON BY THE APPLICANT TO DEVELOP CONSTRUCTION PROCEDURES AND TO PRESENT THESE TO THE CONSTRUCTION MANAGERS (BECHTEL). THIS, WE WERE TOLD, WAS THE STANDARD PROCEDURE. HOWEVER, THE RESPONSIBILITY OF DEVELOPING AND/OR APPROVING PROCEDURES FREQUENTLY SEEMED TO FALL ON BECHTEL'S ENVIRONMENTAL INSPECTORS. IT IS SUGGESTED FOR FUTURE PROJECTS, THAT IN THE INTERESTS OF EFFICIENCY, DETAILED PROCEDURES BE DEVELOPED IN ADVANCE (MAINLY BY THE ENVIRONMENTAL CONSULTANTS AND THE APPLICANT WITH GOVERNMENTAL

AND PUBLIC INPUT, REVIEW AND APPROVAL OF THE DOCUMENTS), WITH SPECIFIC CONTINGENCY PLANS TO BE FOLLOWED IN THE EVENT THAT CHANGES IN THE APPROVED PLANS ARE NECESSARY.

THE 'SPECIFICATION DOCUMENT' AND PERFORMANCE BONDS SHOULD BIND THE CONTRACTOR TO FOLLOWING STATED PROCEDURES TO PROTECT THE ENVIRONMENT. SUCH ADDITIONS ARE RECOMMENDED FOR INCLUSION IN FUTURE CONSTRUCTION SPECIFICATIONS. THERE SHOULD, IN ADDITION, BE ADEQUATE GUIDANCE PROVIDED TO THE CONTRACTOR ON CONSTRUCTION METHODS AND PROCEDURES. IN ADDITION, ENFORCEMENT IS NEEDED TO ENSURE THAT CONTRACTORS FOLLOW THE REQUIREMENTS. CONSTRUCTION SHOULD BE TEMPORARILY HALTED IF THE SPECIFICATIONS ARE IGNORED.

A SUMMARY LIST OF RESTORATION MEASURES WAS PRESENTED BY BECHTEL TO THE PROVINCIAL MINISTRY OF THE ENVIRONMENT WHEN AN INTERIM VERSION OF THIS REPORT WAS BEING COMPLETED. IT WAS ALSO UNDERSTOOD THAT THE PLANS FOR FINAL REHABILITATION WERE ALMOST COMPLETE. IT IS SUGGESTED THAT IN THE FUTURE A PROGRAMME FOR TEMPORARY AND FINAL STABILIZATION AND REHABILITATION BE DEVELOPED PRIOR TO CONSTRUCTION. (TEMPORARY STABILIZATION IS USED IMMEDIATELY AFTER CONSTRUCTION AS AN INTERIM PROTECTION MEASURE UNTIL FINAL RESTORATION CAN BE COMPLETED.) THE RELIANCE ON DEVELOPING SUCH PROGRAMMES WAS ORIGINALLY LEFT WITH THE CONTRACTORS, HOWEVER, INADEQUATE METHODS WERE OCCASIONALLY USED, AND/OR LENGTHY DELAYS EXISTED BETWEEN CONSTRUCTION AND RESTORATION, BY WHICH TIME THE RIGHT-OF-WAY WAS FROZEN REQUIRING MORE EXPENSIVE RESTORATION TECHNIQUES. IT IS UNDERSTOOD THAT IN MANY CASES THESE

TEMPORARY PROCEDURES ARE NOT CONSIDERED IN ESTIMATING THE COSTS IN CONSTRUCTION BIDS.

THIS PROJECT HAS SHOWN THAT MORE DETAILED PLANNING IS NEEDED PRIOR TO COMMENCEMENT OF CONSTRUCTION. THIS PLANNING (WHICH WOULD INCLUDE SUCH ASPECTS AS TIMING, CONSTRUCTION PROCEDURES, IMMEDIATE STABILIZATION PROCEDURES, AND METHODS OF FINAL REHABILITATION) SHOULD LIST ALTERNATE METHODS TO COVER THE POSSIBILITY THAT FIELD CONDITIONS MAY NOT COINCIDE WITH THOSE ANTICIPATED. BY NOTING SUCH ALTERNATIVES, FIELD PERSONNEL, INSPECTORS, THE SPREAD BOSS AND THE CONTRACTOR'S FIELD SUPERVISOR WILL BE ABLE TO INSTITUTE CHANGES WITHOUT THE NECESSITY OF FURTHER INSTRUCTION. THE WEATHER, EXPERIENCED IN THE FALL OF 1975, ON SPREADS 5 AND 6, CAUSED SUCH PROBLEMS AS DISRUPTION OF ROW PIPE STRINGING, EXTENDED AREAS OF OPEN TRENCH, AND CONSTRUCTION DELAYS. THIS RESULTED IN ADVERSE LANDOWNER REACTIONS TO THE CONSTRUCTION. MANY OF THESE PROBLEMS COULD HAVE BEEN MITIGATED THROUGH ADVANCE PLANNING AND PROVISION FOR CONTINGENCIES.

THE PROBLEMS ENCOUNTERED BY BECHTEL ENVIRONMENTAL INSPECTORS WITH CERTAIN CONTRACTORS WAS ALSO A PERTINENT ISSUE. IT APPEARED TO THE OBSERVERS THAT CONTRACTORS ON SOME SPREADS WERE RELUCTANT TO TAKE INSTRUCTION AND ACTION ON ENVIRONMENTAL MATTERS. SUCH RELUCTANCE WOULD INDICATE THE NEED FOR MORE DETAILED INSTRUCTION VIA CONSTRUCTION DRAWINGS AND SPECIFICATIONS AND A MECHANISM TO DISCIPLINE SUCH CONTRACTORS. A BETTER UNDERSTANDING OF ENVIRONMENTAL MATTERS AND IMPROVED COMMUNICATION BETWEEN BECHTEL INSPECTORS ON EACH SPREAD MAY



HAVE ALSO IMPROVED RELATIONS WITH THE CONTRACTORS.

FINALLY, WE WOULD LIKE TO POINT OUT THAT ALL OF THE SPECIFIC PROBLEM AREAS IDENTIFIED AND MORE GENERALLY ADDRESSED IN THE FOLLOWING PAGES WERE REGULARLY BROUGHT TO BECHTEL CANADA'S ATTENTION FOR CORRECTION. IT IS OUR UNDERSTANDING THAT THESE CONCERNS WERE PASSED ON TO IPL STAFF. FIELD VISITS TO THE PIPELINE ROUTE IN THE SPRING OF 1977 IDENTIFIED MANY AREAS WHERE RESTORATION ACTIVITIES AND MEASURES HAD EITHER NOT BEEN UNDERTAKEN OR WERE INADEQUATE AND AS A CONSEQUENCE UNSUCCESSFUL. THIS INSPECTION TOOK PLACE ALMOST THREE AND ONE HALF YEARS FOLLOWING THE COMMENCEMENT OF CONSTRUCTION. OTHER AREAS WERE OBSERVED WHERE RESTORATION MEASURES WERE EXCELLENT AND VERY SUCCESSFULLY UNDERTAKEN.

#### 2.1.2 FIELD OBSERVATIONS:

##### WATERCOURSES

THE PROBLEMS LISTED BELOW WERE OBSERVED AND RECORDED ON FIELD VISITS BY MINISTRY OF THE ENVIRONMENT HEAD OFFICE STAFF. IN MOST CASES, THE PROBLEMS OBSERVED WERE PRESENT ON MORE THAN ONE OCCASION AND ON MORE THAN ONE SPREAD. THE CHART FORMAT IS DESIGNED TO BOTH IDENTIFY A PROBLEM AND TO MAKE RECOMMENDATIONS AS TO POSSIBLE SOLUTIONS. IN SOME CASES, THESE SOLUTIONS WERE DEVELOPED BY BECHTEL INSPECTORS OR INDIVIDUAL CONTRACTORS FOR PARTICULAR SPREADS. THE ADOPTION OF THE RECOMMENDED PROCEDURES BY OTHER SPREADS WAS SLOW AND THIS SERVED TO FURTHER DEMONSTRATE THE COMMUNICATION PROBLEMS THAT OCCURRED BETWEEN INSPECTORS AND/OR CONTRACTORS.

## PROBLEM

### 1. LACK OF PRIOR CONSULTATION

AS REQUIRED BY THE BECHTEL SPECIFICATION (APPENDIX B, EC-9). THE CONTRACTORS WERE TO PROVIDE DETAILS OF INTENDED CONSTRUCTION METHODS TO BE USED. PROVINCIAL REPRESENTATIVES WERE NOT GIVEN THE OPPORTUNITY TO REVIEW THE DRAWINGS REQUIRED BY EC-9. ONE TYPICAL DETAIL FOR ALL STREAMS IS INSUFFICIENT TO DEAL WITH THE DIFFERENT RANGE OF CONDITIONS FOUND IN THE FIELD.

THE METHOD OF CONSULTATION RELIED UPON BY BECHTEL, WAS A SITE VISIT AT SOME DATE PRIOR TO THE INTENDED CONSTRUCTION TO ATTEMPT TO REACH AN AGREEMENT ON METHODS AND PROCEDURES TO BE USED. THE RESULT OF THESE MEETINGS WAS NOT ALWAYS CONFIRMED IN WRITING.

## RECOMMENDATION

DURING THE PLANNING PHASE, BECHTEL CONSULTED WITH MOE AND OTHERS TO OBTAIN DATA WHICH WOULD IDENTIFY 'IMPORTANT' OR 'SENSITIVE' WATERCOURSES. IT IS RECOMMENDED FOR FUTURE APPLICATION THAT SIMILAR INFORMATION BE GATHERED AND THEN, DEPENDING ON THE CONCERNS IDENTIFIED (E.G. SLOPE STABILILITY, SILTATION, POTENTIAL SPAWNING AREAS, ETC.) DETAILED SPECIFICATIONS FOR THE CROSSINGS SHOULD BE PREPARED BY THE CONSULTANTS WITH INPUT FROM MOE, MNR, AND OTHERS WHO HAVE CONCERNS. THE INFORMATION, OR DETAIL, COULD BE SIMILAR TO THAT NOTED IN EC-9. IN ADDITION, TYPICAL DETAILS WITH BUILT IN ENVIRONMENTAL SAFEGUARDS COULD BE DEVELOPED FOR OTHER STREAMS NOT CONSIDERED TO BE AS SENSITIVE. SUCH SPECIFICATIONS COULD THEN ASSIST THE CONTRACTORS IN THEIR COSTING AS WELL AS PROVIDING THEM WITH ACCEPTABLE AND APPROVED METHODS OF ENVIRONMENTAL PROTECTION THAT COULD BE REVIEWED

PROBLEM

RECOMMENDATION

BY ALL CONCERNED IN ADVANCE  
OF CONSTRUCTION.

2. ENVIRONMENTAL RESPONSIBILITY  
OF CONTRACTORS

RELIANCE WAS PLACED FOR KNOWLEDGE OF ASPECTS OF CONSTRUCTION, ENVIRONMENTAL FACTORS, AND ENVIRONMENTAL CONCERNS. CONTRACTORS DID NOT SEEM TO BE AWARE OF POTENTIAL ENVIRONMENTAL PROBLEMS NOR OF AVAILABLE SOLUTIONS, EVEN THOUGH AN ENVIRONMENTAL INVENTORY AND GENERAL SPECIFICATIONS TO PROTECT THE ENVIRONMENT WERE PREPARED BY THE CONSULTANTS. THUS, THE INABILITY OF THE CONTRACTORS TO PROVIDE ADEQUATE SOLUTIONS (E.G., "...SHALL DESIGN ITS OWN SILTATION CONTROL MEASURES...", (APPENDIX B, EC-9(D)(1))), WAS A MAJOR PROBLEM.

IN FUTURE, THE CONSULTANTS SHOULD RELATE THEIR DETAILED INVENTORY OF ENVIRONMENTAL FACTORS TO ALL AREAS OF THE PIPELINE AND SHOULD RECOMMEND IN DRAWINGS AND SPECIFICATIONS DETAILED TECHNIQUES AND PROCEDURES TO BE USED FOR EACH AREA THAT THE PIPELINE IS TO CROSS. IT IS DESIRABLE TO HAVE CONTINGENCY PLANS AVAILABLE IN THESE RECOMMENDATIONS TO COVER SEASONAL CHANGES AND RANGES OF CONDITIONS, ESPECIALLY IF COMMITMENTS CANNOT BE MADE AS TO THE DESIRED TIME FOR COMMENCEMENT OF CONSTRUCTION. EDUCATION OF CONTRACTORS SEEMS TO BE AN IMPORTANT FACTOR, BUT IT IS MORE IMPORTANT THAT THE

PROBLEM

THE PROVINCE REQUESTED, AND THE ENVIRONMENTAL SPECIFICATIONS NOTED (APPENDIX B, EC-9(A)(II)) THAT AT LEAST 72 HOURS NOTICE BY THE CONTRACTORS BE GIVEN TO THE MOE REGIONAL OFFICES AND THE WATER RESOURCES BRANCH PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ANY WATERCOURSE. THE NOTIFICATIONS RECEIVED BY THE MINISTRY, HOWEVER, WERE IRREGULAR OR NON-EXISTENT IN SOME CASES. THUS, IT WAS NOT ALWAYS POSSIBLE TO SCHEDULE PERSONNEL TO BE AVAILABLE IN THE FIELD AT THE TIME CONSTRUCTION WAS CARRIED OUT. IN SOME CASES THAT WE ARE AWARE OF EVEN THE BECHTEL INSPECTORS WERE NOT GIVEN SUFFICIENT WARNING.

RECOMMENDATION

CONTRACTOR BE GIVEN MORE DETAILED INFORMATION AND GUIDANCE IN FIELD REQUIREMENTS THAT HAVE BEEN APPROPRIATELY DISCUSSED AND AGREED TO BY ALL THOSE INVOLVED.

A GREATER COMMITMENT IS REQUIRED BY BOTH CONTRACTORS AND CONSULTANTS TO CO-ORDINATE THEIR CONSTRUCTION PROGRAMME SUCH THAT ADEQUATE NOTIFICATION CAN BE GIVEN. PROVISION FOR STRICT ENFORCEMENT OF SUCH IS NECESSARY AND SHOULD BE EXERCISED WHEN THIS NOTIFICATION DOES NOT OCCUR.

PROBLEM

4. ROAD ACCESS THROUGH  
WATERCOURSES

IN GENERAL, AN ATTEMPT WAS MADE BY BECHTEL TO PERMIT CROSSINGS 'IN THE STREAM" ONLY WHERE FIRM GRANULAR BOTTOMS WERE AVAILABLE AND TO MINIMIZE THE NUMBER OF CROSSINGS BY ANY ONE VEHICLE. THE CONTROLS ON THE CONTRACTORS WERE NOT SPECIFIED. AS A RESULT, ON A NUMBER OF OCCASIONS, EXCESSIVE TRAFFIC BY VEHICLES THROUGH AND ALONG THE STREAMBED WAS OBSERVED.

RECOMMENDATION

IF THIS METHOD IS USED AT ALL, CLOSER CONTROL BY CONTRACTING FOREMEN ON THE TRANSIT TIME OF VEHICLES IN THE WATERCOURSE AND ENFORCEMENT OF THE 'ONE PASSAGE' RULE ARE NECESSARY. PASSAGE THROUGH THE STREAM SHOULD ONLY BE USED WHERE THE RIGHT-OF-WAY IS DRY, SO MANUAL TREAD CLEANING IS MINIMIZED. IF CONDITIONS ARE WET, EXTENSIVE CLEANING WOULD BE NECESSARY. UNFORTUNATELY, TREAD CLEANING TAKES TIME - A MORE APPROPRIATE METHOD WOULD BE TO AVOID PASSING THROUGH THE STREAM BY USING A TEMPORARY BRIDGE STRUCTURE OF A 'KNOCK DOWN' VARIETY OR OF A MORE PERMANENT NATURE, SUCH AS A BAILEY BRIDGE, WHICH CAN BE USED OVER AND OVER AGAIN AS CONSTRUCTION PROCEEDS.

PROBLEM

5. TRACKING OF MUD

TRACK AND TIRE VEHICLES WILL COLLECT MUD FROM THE ROW (AND MORE SO IN WET WEATHER). THIS MATERIAL IS WASHED OFF BY THE WATER FLOW AS THE VEHICLE PASSES THROUGH A WATERCOURSE.

6. VEHICLES IN THE STREAM

THIS PROBLEM RELATES IN PART TO THE SILTATION PROBLEM NOTED IN #4 ABOVE. THE STREAM WAS BEING USED AS A ROADBED, WITH MOVEMENT OF EQUIPMENT ACROSS AND UP AND DOWN THE STREAMBED. THE NECESSITY FOR

RECOMMENDATION

CONSTRUCTION UNDER WET CONDITIONS SHOULD BE DEFERRED IF POSSIBLE. CONTRACTORS SHOULD AVOID INSTREAM TRAVEL FOR STREAMS WHICH HAVE BEEN NOTED IN THE ENVIRONMENTAL REPORTS TO BE SENSITIVE TO SILTATION. ON OTHER STREAMS EQUIPMENT OPERATORS SHOULD REMOVE EXCESS MUD FROM TREADS AND TRACKS PRIOR TO CROSSING THE STREAM. THIS PROCEDURE COUPLED WITH PRIOR PREPARATION OF APPROACHES TO STREAMS (APPROX. 20 FEET BACK), WITH CLEAN RIP-RAP MATERIAL WILL MINIMIZE THE TRACKING OF SOIL MATERIAL INTO THE STREAM.\*

NO VEHICLES SHOULD BE ALLOWED INTO WATERCOURSES CONSIDERED SENSITIVE. FOR OTHER STREAMS, WHERE IT IS TECHNICALLY IMPRACTICAL TO CROSS THE STREAM IN THE DRY, CROSSINGS SHOULD BE MADE AT THE RIGHT ANGLES TO THE CURRENT FLOW.

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\* RIP-RAP - REFERS TO MATERIAL (I.E., STONE, WOOD, ETC.) PLACED TO PREVENT EROSION, PROVIDE SUPPORT, ETC.

PROBLEM

SUCH TRAVEL WAS NOT NOTED IN ANY REPORTS.

RECOMMENDATION

ALL STREAM CROSSING TECHNIQUES AND AREAS SHOULD BE WELL DOCUMENTED AND JUSTIFIED IN ADVANCE.

7. TRENCH OPEN TOO LONG  
IN AREAS OF HIGH GROUND WATER

ON A NUMBER OF OCCASIONS, THE EXCAVATING OR TRENCHING CREW OPENED AN AREA WELL IN ADVANCE OF THE WELDING AND PIPE-LAYING CREW. THE INFILTRATION OF GROUND WATER THAT RESULTED OVER A PERIOD OF TIME WAS SUFFICIENT TO FILL THE TRENCH WITH WATER AND TO INITIATE THE COLLAPSING OF BANKS. THE DISPOSAL OF WATER WITH EXCESSIVELY HIGH SILT CONTENT BECAME A PROBLEM WHEN DISPOSED TO WATERCOURSES IN THE AREA.

THE TRENCHING OPERATION SHOULD NOT BE ALLOWED TO PROGRESS TOO FAR IN ADVANCE OF BACKFILLING OPERATIONS. THE DISPOSAL OF SILTY WATER REQUIRES SPECIAL PRECAUTIONS. THE CONTRACTOR SHOULD NOT BE ALLOWED TO PUMP IT DIRECTLY INTO A STREAM. WHENEVER EXCAVATION TAKES PLACE, THE MATERIAL SHOULD BE PLACED SO AS TO AVOID ANY DRAINING BACK INTO THE WATERCOURSE. STRAW BALES OR RETAINING BERMS SHOULD BE APPROPRIATELY PLACED IN ADVANCE.

PROBLEM

RECOMMENDATION

8. CONSTRUCTION THROUGH WATER-  
COURSE AREAS

A) EXCAVATION OF TRENCH  
THROUGH STREAMS

IN FUTURE THIS MINISTRY WILL  
PROMOTE DRY CROSSINGS OF STREAMS  
WHERE TECHNICALLY FEASIBLE.

SILT WAS ADDED TO THE WATERCOURSE  
IN A VARIETY OF CIRCUMSTANCES.  
WATER MAY HAVE BEEN ALLOWED  
TO FLOW ACROSS THE TRENCH BOTH  
DURING AND AFTER EXCAVATION.  
FURTHERMORE, WATER FROM THE MAIN  
STREAM AREA WOULD, WHEN UNHINDERED  
BY GRADE OR TRENCH PLUGS, FOLLOW  
THE EXCAVATED TRENCH. THIS WATER  
WOULD OFTEN CAUSE COLLAPSE OF  
TRENCH BANKS. SUBSEQUENT CLEAN-  
OUT AND BACKFILLING OPERATIONS  
WOULD CAUSE SILTATION TO THE  
TRENCH WATERS WHICH WOULD THEN  
USUALLY BE ALLOWED TO FLOW  
FREELY BACK INTO THE MAIN WATER-  
COURSE. STREAM BANK AND BOTTOM  
AREAS WOULD BE LEFT UNPROTECTED  
SUBSEQUENT TO CONSTRUCTION AND  
WOULD ERODE BADLY. IN ONE AREA

AS NOTED IN THE SPECIFICATIONS,  
PLUGS SHOULD BE LEFT IN THE  
TRENCH AND EXCAVATION IN FLOOD  
PLAIN AREAS SHOULD NOT BE  
CARRIED OUT UNTIL THE PIPE-  
LAYING IS IMMINENT (WITHIN 12  
HOURS). IN MOST SMALLER  
WATERCOURSES, PIPES SHOULD BE  
USED TO CARRY UPSTREAM WATER  
ACROSS THE TRENCH TO BE  
DISCHARGED DOWNSTREAM OF THE  
EXCAVATION. AGAIN, SANDBAGS OR  
OTHER CLEAN IMPERMEABLE MATERIAL  
SHOULD FIRST BE PLACED AT EITHER  
END OF THE PIPE TO DIRECT STREAM  
WATER OVER THE AREA WHERE THE  
TRENCH IS TO BE LOCATED. WATER  
ENTRAPPED IN THE TRENCH SHOULD  
BE PUMPED TO AN ACCEPTABLE  
PREDETERMINED LAND AREA.



PROBLEM

THE PIPELINE WAS FOUND EXPOSED  
IN THE STREAM COURSE AREA SUB-  
SEQUENT TO FINAL RESTORATION.

RECOMMENDATION

REQUIRED ROADS CAN THEN BE  
CONSTRUCTED ACROSS THE WATER-  
COURSE AREA AND THE TRENCH  
EXCAVATED UNDER THE CULVERTS  
CARRYING THE STREAM WATER.  
SPECIAL ENVIRONMENTAL  
CONDITIONS (IE. SHALLOW  
BEDROCK AREAS) MAY REQUIRE  
THAT DIFFERENT CONSTRUCTION  
TECHNIQUES BE DEvised THAN  
THE ONE SUGGESTED HERE AS AN  
EXAMPLE. AFTER THE PIPELINE  
HAS BEEN LAID, SUITABLE PRE-  
DETERMINED RESTORATION OF  
STREAM BOTTOM AREA AND BANKS  
SHOULD BE INSTALLED BEFORE  
REMOVAL OF THE CULVERT. THE  
FINAL STEP WOULD BE TO REMOVE  
THE ROAD CROSSING AND ANY  
LOOSE MATERIAL BEFORE FULLY  
REMOVING THE SAND BAGS AND  
PIPES. TRENCHING IN WATER  
COURSE AREAS MUST ALLOW SUFF-  
ICIENT DEPTH BELOW THE  
STREAM BOTTOM AND THROUGHOUT  
THE FLOOD PLAIN AREA TO  
PROTECT THE PIPELINE.

PROBLEM

RECOMMENDATION

b) ROADWAY ACROSS WATERCOURSE

THE MOST IMPORTANT PROBLEM WITH THE ROADWAY APPEARS TO BE THE CHOICE OF MATERIAL USED. IN MOST CASES, THE LOCALLY AVAILABLE SOIL MATERIAL WAS USED TO COVER CULVERTS. THE SPECS NOTED (APPENDIX B, EC-9(E)(VIII)) THAT GRANULAR MATERIAL SHOULD BE USED. CLEAN-WASHED MATERIAL WAS OBSERVED IN ONE LOCATION, ALTHOUGH IT WAS NOTED THAT 'SHOT-ROCK' MATERIAL WAS USED IN A FEW OTHER LOCATIONS.\* IN SOME SITUATIONS, LOCAL SOIL MATERIAL WAS USED EVEN WHEN CLEANER 'SHOT-ROCK' WAS AVAILABLE AT THE SAME LOCATION. IT WAS RARE TO OBSERVE SANDBAG PROTECTION AT ANY OF THESE AREAS.

SOIL MATERIAL SHOULD NOT BE USED UNLESS CONSIDERED ABSOLUTELY NECESSARY, AND AGREED TO BY THE APPROPRIATE AUTHORITIES. THE BEST ALTERNATIVE IS CONSIDERED TO BE GRANULAR MATERIAL WITH CLEAN, WASHED GRAVEL (LARGE DIAMETER) BEING THE MOST DESIRABLE. IF SOIL MATERIAL MUST BE USED, SANDBAGS SHOULD BE PLACED AROUND CULVERTS, BOTH UP AND DOWNSTREAM PRIOR TO SOIL MATERIAL BEING DUMPED AND/OR RETRIEVED, TO AVOID SILTATION. FLUMES SHOULD EXTEND BEYOND THE SANDBAGS AT EITHER END TO MINIMIZE BACKWASH.

c) CHOICE AND PLACING OF CULVERTS

ON A NUMBER OF OCCASIONS, CONTRACTORS TENDED TO UNDERSIZE THE CULVERTS USED IN STREAM BEDS, IN

CULVERT SIZE AND STRENGTH SHOULD BE SELECTED BY THE ENVIRONMENTAL CONSULTANTS AND

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\* SHOT ROCK - REFERS TO THE ROCK PIECES REMAINING AFTER BLASTING OPERATIONS IN AREAS WHERE BEDROCK IS ENCOUNTERED.

### PROBLEM

SOME CASES IN SPITE OF RECOMMENDATIONS MADE BY THE ENVIRONMENTAL CONSULTANTS. IN ADDITION, THE TYPE OF CULVERT CHOSEN ON A NUMBER OF SPREADS WAS INAPPROPRIATE FOR THE HEAVY USAGE TO WHICH IT WAS TO BE PUT. QUITE OFTEN CULVERT LENGTH WAS INSUFFICIENT TO PREVENT BACK-WASH AND STREAM CUTTING OF CROSSING AREAS. CULVERTS WERE ALSO IMPROPERLY PLACED SUCH THAT EROSION OF A DOWNSTREAM BANK OCCURRED OR IMPROPER LEVELLING OF THE CULVERT CONSTRAINED ITS EFFECTIVE CAPACITY.

### RECOMMENDATION

AN APPROPRIATE NUMBER THAT MEET REQUIREMENTS SHOULD BE PUT IN PLACE. INSPECTION OF PLACEMENTS AND SIZING IS IMPORTANT TO AVOID EROSION. SIZING SHOULD BE CALCULATED ON THE BASIS OF WEATHER CONDITIONS AND FLOOD WATERS WHICH COULD BE EXPECTED AT THAT PARTICULAR TIME OF YEAR. SERIOUS ATTENTION SHOULD BE PAID TO ALLOWING FOR SOME EXCESS CAPACITY, TO ACCOMMODATE WEATHER EXTREMES. TO AVOID CRUSHING OR DISTORTION, LIGHT GAUGE CULVERTS SHOULD NOT BE USED UNLESS THEY ARE ADEQUATELY PADDED. LANDOWNERS MAY REQUEST THAT CULVERTS BE LEFT. CULVERTS SHOULD NOT BE LEFT IN STREAM AFTER CONSTRUCTION UNLESS IT CAN BE PROVEN THAT THEIR CAPACITY IS SUFFICIENT TO ACCOMMODATE A REGIONAL STORM.

### PROBLEM

#### D) GRADING OF BANKS TO EDGE OF WATERCOURSE

ALTHOUGH NOTED (APPENDIX B, EC-9 (B)(L)) IN THE SPECIFICATIONS PROVIDED BY BECHTEL, CONTRACTORS REMOVED MORE VEGETATION THAN WAS REQUIRED ON APPROACHES TO WATERCOURSES. (REFER TO APPENDIX E). DURING PERIODS OF RAINFALL OR HIGH WATER ERODED MATERIAL FROM THE STRIPPED ROW WOULD FLOW FREELY INTO THE WATERCOURSE. RETENTION OF THE STRIP OF VEGETATION ACROSS THE ROW COULD PREVENT THIS FROM OCCURRING.

#### 9. WATER TAKING AND REPLACEMENT

##### A) WATER REPLACEMENT

ALTHOUGH A 'WATER PRESSURE DIFFUSER' WAS USED DURING THE RETURN OF WATER TO A STREAM PLACEMENT OF THE 'DIFFUSER' ON THE BANK WELL BACK FROM THE EDGE OF THE WATERCOURSE CAUSED EXCESSIVE EROSION OF THE STREAM BANK AREA.

### RECOMMENDATION

STRICTER ENFORCEMENT OF THE CRITERIA BY THE INSPECTORS AS WELL AS PERSON-TO-PERSON CONTACT WITH MEMBERS OF THE RIGHT-OF-WAY CLEANING, GRUBBING, AND GRADING CREW SHOULD ASSIST IN A BETTER UNDERSTANDING OF THE POTENTIAL PROBLEM AND A BETTER FIELD CONTROL SYSTEM. MARKERS, FLAGS OR EVEN FENCING COULD BE USED.

IF WATER REPLACEMENT WERE CARRIED OUT IN ACCORDANCE WITH THE GUIDELINES LAID DOWN BY THIS MINISTRY, THE PROBLEM WOULD HAVE BEEN ALLEVIATED. THIS WOULD NORMALLY MEAN THAT, WHEN DISCHARGING TO WATER COURSES, PIPES SHOULD BE PLACED IN THE WATERCOURSE

PROBLEM

B) EQUIPMENT FOR WATER TAKING  
E.G., PUMPS, MOTORS, ETC. WAS  
OBSERVED IN OR VERY NEAR THE  
WATERCOURSE.

RECOMMENDATION

POINTING IN THE DIRECTION OF  
FLOW OR STRAIGHT UP OVER THE  
WATER SO THAT MINIMUM SCOUR  
OCCURS. WITH SUCH ARRANGE-  
MENT, A TAP SYSTEM WOULD BE  
REQUIRED TO PERIODICALLY TAKE  
SAMPLES AND MONITOR WATER  
QUALITY. THUS, AT THE  
APPROPRIATE TIME, TANK TRUCKS  
COULD BE USED TO HAUL AWAY  
CONTAMINATED LINE-FILL. THE  
CONTRACTORS MAY BE MORE  
INCLINED TO FOLLOW THE  
CONDITIONS OF THE 'PERMIT TO  
TAKE WATER' IF MORE FREQUENT  
SITE VISITS WERE MADE BY MOE  
STAFF.

SUCH EQUIPMENT SHOULD BE  
PLACED WELL BACK FROM THE EDGE  
OF THE WATERCOURSE, ALLOWING  
FOR POTENTIAL RISES IN WATER  
LEVELS. SUCH EQUIPMENT SHOULD  
BE PLACED SO THAT ANY SPILLS,  
RELATED TO REFUELLING, CAN BE  
CONTROLLED. METHODS TO BE  
CONSIDERED WOULD INCLUDE

PROBLEM

RECOMMENDATION

c) REFUELLING WAS OBSERVED IN ONE WATERCOURSE.

PLASTIC SHEETING UNDER EQUIPMENT AND/OR BERMS AROUND THE EQUIPMENT. PROCEDURES SUGGESTED IN THE SPECIFICATIONS WOULD HAVE BEEN ADEQUATE IF FOLLOWED. (REFER TO APPENDIX B)

ANY NECESSARY REFUELLING OPERATIONS MUST BE CARRIED OUT WITHOUT RISK OF CONTAMINATION TO THE WATERCOURSE.

10. RESTORATION

MANY INADEQUATE OR IMPROPER TEMPORARY AND FINAL RESTORATION MEASURES WERE USED IN STEEP FLOOD PLAIN OR STREAM BANK AREAS. MANY OF THE RESTORATION MEASURES OBSERVED EITHER DID NOT FOLLOW OR FOLLOWED IMPROPERLY THE WRITTEN INSTRUCTIONS PROVIDED BY THE LINE LISTS. THERE WERE MANY AREAS WHERE CONSTRUCTION IMPACTS OCCURRED OFF OF THE PRESCRIBED AND APPROVED ROW. IN SOME OF THESE

THE INEFFECTIVENESS OF THE LINE LISTS TO PROVIDE SUFFICIENTLY DETAILED DIRECTION AND LACK OF INSPECTION AND ENFORCEMENT DEMONSTRATES THAT MORE GUIDANCE AND MORE DETAILED PROCEDURES ARE NECESSARY. OFF SITE ROW DAMAGE SHOULD BE AVOIDED IF POSSIBLE. IF IT DOES OCCUR RESTORATION MEASURES SHOULD BE IMMEDIATELY UNDERTAKEN TO RELIEVE IMPACTS CREATED.

PROBLEM

AREAS LITTLE OR NO EFFORT WAS MADE TO INSTALL PROTECTIVE MEASURES CONSISTENT WITH REQUIREMENTS FOR THE ROW.

A) SURFACE BERMS

MANY SURFACE BERMS (USUALLY CONSTRUCTED WITH EARTH) WERE FOUND IMPROPERLY PLACED OR DIRECTED SUCH THAT THEY WERE EITHER INEFFECTIVE OR CAUSED ADDITIONAL EROSION OR SILTATION PROBLEMS IN OTHER AREAS BOTH ON AND OFF THE ROW. SUITABLE COLLECTOR SYSTEMS AND DECANTING AREAS FOR THE RUN-OFF WATER CAUGHT BY THE BERMS WERE RARE AND USUALLY INEFFECTIVE. AGAIN, THE MEASURES WERE INEFFECTIVE BECAUSE OF IMPROPER DIRECTION OR LACK OF KNOWLEDGE OF APPROPRIATE TECHNIQUES.

RECOMMENDATION

DETAILED CONTRACT DRAWINGS AND SPECIFICATIONS MUST BE PROVIDED TO THE CONTRACTOR WHICH WILL DIRECT HIM IN HIS RESTORATION ACTIVITIES. THE DRAWINGS CAN BE RELATIVELY SIMPLE BUT MUST PROVIDE DIRECTION FOR PLACEMENT OF BERMS ON SLOPE AREAS, INSTALLATION OF RUN-OFF WATER COLLECTION SYSTEMS, APPROPRIATE DECANTING OR SETTLING AREAS AND ANY OTHER SPECIAL RESTORATION MEASURES REQUIRED FOR THE SPECIFIC AREA IN QUESTION. A LISTING OF ALL MATERIALS REQUIRED FOR THIS PURPOSE SHOULD BE INCLUDED IN THE TENDER DOCUMENTS.

PROBLEM

B) SOILS AND SUBSURFACE  
CONDITIONS

THE CONTRACTORS SEEMED TO HAVE LITTLE SENSITIVITY TO VARYING SOILS AND SUB-SURFACE CONDITIONS WHICH IN SOME AREAS REQUIRED MORE SUBSTANTIAL RESTORATION MEASURES TO BE IMPLEMENTED IMMEDIATELY AFTER THE LAYING OF PIPE. GOOD EXAMPLES OF THIS WERE THE WEST BANKS OF THE EAST AND WEST OAKVILLE CREEKS. THE CONTRACTOR REPLACED SOIL AND SUBSURFACE MATERIALS SEVERAL TIMES AND ON EACH OCCASION, THE SLOPES SLUMPED INTO THE WATER COURSE AREA CAUSING SILTATION AND DEGRADATION OF THE WATER COURSE AND NECESSITATING CONSTRUCTION ACTIVITIES IN THE STREAM AREA ON EACH OF THESE OCCASIONS TO REPLACE THE SLUMPED MATERIALS. PROVINCIAL STAFF SUGGESTED MORE RIGOROUS MEASURES OF STABILIZATION IN MANY OF THE CASES WHERE PROBLEMS WERE

RECOMMENDATION

SPECIFICATIONS AND CONTRACT DRAWINGS THAT ARE SITE SPECIFIC MUST DESCRIBE IN DETAIL THE REQUIREMENTS LAID DOWN AND AGREED TO BY THE PIPELINE CONSULTANTS.

SPECIAL MATERIALS FOR INSTALLATION OF GABIONS, SUB-SURFACE SANDBAG BREAKERS AND PINNING MATERIALS FOR STEEP SLOPE AREAS SHOULD ALL BE REFERENCED AND INCLUDED IN LISTINGS OF MATERIALS AND LOCATED IN SPECIFICATIONS AND DRAWINGS.

TECHNIQUES MUST BE ESTABLISHED FOR ALLEVIATION OF COMPACTION OF SOILS IN NATURAL AREAS. THE EFFECTS OF SOIL COMPACTION IN THESE AREAS CAN BE JUST AS SUBSTANTIAL AT INHIBITING PROPER VEGETATION RESTORATION AS IT IS ON AGRICULTURAL LANDS.



### PROBLEM

EXPECTED AND USUALLY OCCURRED, BUT THESE SUGGESTIONS WERE FOR THE MOST PART IGNORED UNTIL AFTER THE PROBLEMS REOCCURRED ON A NUMBER OF OCCASIONS.

COMPACTION OF SOILS IN NATURAL AREAS SUCH AS FLOOD PLAINS WAS NOT ALLEVIATED BY THE STANDARD TECHNIQUES USED IN THE AGRICULTURAL AREAS.

THERE APPEARED TO BE MANY AREAS WHERE SUBSOIL-TOPSOIL MIXING OCCURRED IN THE FLOOD PLAIN LANDS.

#### c) SEEDING

AREAS WERE PLANTED WITH SEED MIXTURES THAT DID NOT ESTABLISH PROPERLY AND AS A CONSEQUENCE DID NOT PROTECT THE SOILS FROM EROSION. SEED WAS OFTEN SOWN WITHOUT BEING PROTECTED BY MULCH OR LIGHTLY COVERED BY SOIL. SEEDING

### RECOMMENDATION

CONTRACTORS WOULD HAVE TO RETURN TO MANY AREAS TO PLANT ADDITIONAL SEED AND REPAIR SLOPES THAT HAVE EXPERIENCED EROSION AS A RESULT OF THE POOR 'CATCH'. MUCH OF THIS RETURN WORK WOULD HAVE TO BE UNDERTAKEN BY HAND. PROPER

## PROBLEM

APPEARED TO BE DONE IN A HAP-  
HAZARD WAY AND WAS LEFT WITH  
LITTLE OR NO PROTECTION THAT  
WOULD ENCOURAGE A GOOD 'CATCH'.

MANY AREAS WERE NOT FINALLY  
SEEDED AT ALL AND WERE LEFT TO  
GROW WEEDS. WE WERE TOLD THAT  
IN MANY OF THESE AREAS AGREE-  
MENTS HAD BEEN MADE WITH  
LANDOWNERS TO CONDUCT FINAL  
SEEDING. WE SUSPECT THAT FOR  
SOME OF THESE THE SEEDING  
REQUIRED MAY NEVER BE UNDER-  
TAKEN. WE EXCLUDE FROM THE  
PREVIOUS COMMENT, AREAS WHERE  
NATURAL REGENERATION IS CONSID-  
ERED TO BE DESIRABLE. THERE  
WERE CONFLICTING VIEWS BETWEEN  
SOME PROVINCIAL STAFF AND  
BECHTEL CONSULTANTS CONCERNING  
THE SEEDING PLANS FOR CERTAIN  
AREAS.

## RECOMMENDATION

SEED GERMINATION AND ESTABLISH-  
MENT IS DEPENDENT UPON SUITABLE  
CONDITIONS.

REGULAR FOLLOW-UP MONITORING  
PROGRAMS MUST BE CONDUCTED ON  
ALL AREAS OF PIPELINE CON-  
STRUCTION BY A BOARD INSPECTOR  
TO DETERMINE THE EFFECTIVE-  
NESS OF RESTORATION MEASURES  
AND TO ENSURE THAT AGREEMENTS  
WITH LANDOWNERS HAVE BEEN  
PROPERLY CARRIED OUT. WE  
WOULD GENERALLY LIKE TO  
DISCOURAGE RESEEDING  
AGREEMENTS WITH LANDOWNERS  
IN AREAS WHERE THERE IS SOME  
IMPORTANCE ATTACHED TO A  
SPECIFIC RESTORATION PROGRAM.  
WE FEEL THE RESPONSIBILITY  
SHOULD REMAIN WITH THE CON-  
TRACTOR AND PIPELINE COMPANY.  
THE PROVINCIAL OBSERVERS WOULD  
LIKE TO SEE A SIMPLE MECHANISM

PROBLEM

RECOMMENDATION

DEVELOPED FOR RESOLUTION OF CONFLICTS ON VERY SPECIFIC MATTERS SUCH AS THOSE REFERENCED HERE.

D) TREE PLANTING & REPAIR

TREES AND SHRUBS WERE PLANTED IN SOME AREAS AND NOT IN OTHERS WHICH WOULD HAVE BENEFITED FROM THE STABILIZING EFFECTS OF THEIR ROOT SYSTEMS. TREES AND SHRUBS WERE PLANTED IN A LINEAR FASHION IN AREAS WHERE THEY WERE COMPLETELY INCONGRUOUS WITH THE SURROUNDING NATURAL SETTING. IN MANY AREAS PROVINCIAL OBSERVERS FOUND DAMAGED TREES THAT HAD NOT BEEN PRUNED OR PAINTED AS REQUIRED BY THE SPECIFICATIONS.

TREE AND SHRUB PLANTING SHOULD BE PLANNED AS TO VARIETIES, LOCATION AND LAYOUT SO AS TO PROVIDE SOIL STABILIZATION AND HARMONIZE WITH THE SURROUNDINGS.

INSPECTION OF TREE PRUNING AND REPAIR MUST BE MORE RIGOROUSLY UNDERTAKEN TO ENSURE THAT THE TASK IS SUCCESSFULLY COMPLETED. CONTRACTORS MUST BE HELD TO THEIR AGREED-TO RESPONSIBILITIES. GREATER EFFORT SHOULD BE MADE TO AVOID DAMAGE TO TREES DURING CONSTRUCTION.

E) PROTECTION OF THE ROW

CONSIDERABLE EVIDENCE OF DISRUPTION OF FINAL RESTORATION MEASURES WAS EVIDENT ALONG THE

NEW MEASURES SHOULD BE DEvised SPECIFICALLY TO PROTECT RIGHT-OF-WAY REGENERATION AND

PROBLEM

ROW. THIS DISRUPTION WAS CAUSED PRIMARILY BY TRAIL BIKES AND OTHER ROUGH TERRAIN VEHICLES. THE CLEARING OF FORESTED AREAS APPEARED TO PROVIDE NEW ACCESS TO RIVER VALLEY LOCATIONS FOR THESE ACTIVITIES.

RECOMMENDATION

RESTORATION MEASURES THAT HAVE BEEN INSTALLED. MORE GENERALLY, FENCING OR OTHER APPROPRIATE TECHNIQUES MUST BE EXPLORED THAT WILL PREVENT ACCESS VIA THE NEW RIGHT-OF-WAYS TO FLOOD PLAIN AREAS. THE IMPACT CAUSED BY THIS ACTIVITY APPEARS TO BE SUBSTANTIAL AND REQUIRES IMMEDIATE ATTENTION AND STUDY.

## 2.1.2 FIELD OBSERVATIONS:

### LAND

THE FOLLOWING PROBLEMS AND RECOMMENDATIONS RELATE TO OBSERVATIONS AWAY FROM WATERCOURSES. SOME OF THESE OBSERVATIONS ARE CONCERNED WITH AGRICULTURAL PROBLEMS. THESE WERE CURSORY OBSERVATIONS. OTHER AGRICULTURAL PROBLEMS MAY HAVE OCCURRED, BUT WERE NOT OBSERVED AS ONLY LIMITED TIME WAS SPENT IN FARM AREAS DUE TO THE PRESENCE OF BOTH PROVINCIAL AND FEDERAL AGRICULTURAL EXPERTS. HOWEVER, THE CONCERNS IDENTIFIED WERE IMPORTANT OR REPETITIOUS ENOUGH THAT THEY WARRANT CONSIDERATION HERE. READERS SHOULD NOTE THAT A FEDERAL TEAM OF AGRICULTURAL EXPERTS PREPARED GUIDELINES FOR SPECIFIC AGRICULTURAL PROBLEMS. (PRESANT, 1975)

#### PROBLEM

##### 1. LACK OF SEPARATION OF TOPSOIL AND SUBSOIL

THE OVERLAP OF TOPSOIL AND SUBSOIL PILES OCCURRED FREQUENTLY. THE USUAL EXCUSE WAS THAT THE ROW RESTRICTIONS NECESSITATED THE PILING OF TOPSOIL AND SUBSOIL IMMEDIATELY ADJACENT TO ONE ANOTHER.

#### RECOMMENDATION

IN FUTURE, EITHER LARGER RIGHTS-OF-WAY MUST BE OBTAINED, OR THE WORKING AREA OF THE ROW SHOULD BE RESTRICTED, THUS ALLOWING MORE ROOM FOR THE STORAGE OF EXCAVATED MATERIAL.

### PROBLEM

#### 2. PLACEMENT OF SOIL IN WOODLOTS

ON FREQUENT OCCASIONS, SOIL MATERIAL EXCAVATED WAS PLACED IN WOODLOTS ON EITHER OR BOTH SIDES OF ROW. AS WELL AS POTENTIAL LONGTERM DAMAGE, IMMEDIATE PHYSICAL DAMAGE WAS SUSTAINED BECAUSE OF THE EFFORT REQUIRED TO REMOVE THE SOIL, OFTEN BY MECHANICAL EQUIPMENT.

### RECOMMENDATION

THE ACCESS TO WOODLOTS ALONG RIGHTS-OF-WAY SHOULD BE RESTRICTED BY THE USE OF SUCH METHODS AS SNOW FENCES AND INTENSIVE EDUCATION PROGRAMMES. IF TREES ARE TO BE SAVED, SOILS SHOULD NOT BE PILED AROUND ROOT SYSTEMS NOR SHOULD HEAVY EQUIPMENT BE ALLOWED TO PASS CLOSE TO THE TRUNK. IF, BY ACCIDENT, SOME SOIL MATERIAL IS PLACED AROUND THE ROOTS, IT SHOULD BE REMOVED AS QUICKLY AS POSSIBLE BY HAND OR BY SPECIALIZED EQUIPMENT THAT WILL NOT CAUSE FURTHER DAMAGE.

#### 3. DAMAGE TO TREES

THE MOVEMENT OF CONSTRUCTION EQUIPMENT IN AND AROUND WOODLOT AREAS, OR SINGLE TREES, ALLOWS FOR DAMAGE BY CONTACT. THE CUTTING OR SCRAPING OF BARK AND/

ACCESS BY VEHICLES TO TREES MUST BE PROHIBITED. OVERHANGING BRANCHES SHOULD BE REMOVED PRIOR TO THE MOVEMENT OF MECHANIZED VEHICLES

PROBLEM

OR ROOTS AND REMOVAL OF LIMBS THROUGH CONTACT WITH MACHINES CAN BE SERIOUSLY INJURIOUS TO THE HEALTH OF A TREE, EITHER PERMANENTLY DAMAGING IT, KILLING IT, OR ALLOWING FOR DISEASE INFESTATION. TREE MORTALITY BY THIS MEANS MAY BE VERY SLOW AND AS A RESULT IT MAY BE DIFFICULT TO IMMEDIATELY RECOGNIZE THE EXTENT OF DAMAGE.

RECOMMENDATION

ALONG THE RIGHT-OF-WAY. TREES OR TREED AREAS TO BE PROTECTED SHOULD BE FENCED AT THE 'DRIP LINE'. WHERE VEHICLE PASSAGE MUST BE CLOSER TO THE TREE(S) THE TRUNKS CAN BE PADDED WITH SUITABLE MATERIAL FOR PROTECTION. WHEREVER DAMAGE DOES OCCUR, BRANCHES SHOULD BE PROPERLY PRUNED AND TREE PAINT SHOULD BE APPLIED. IF TRENCH CONSTRUCTION MUST PASS CLOSE TO TREES WHICH ARE TO BE SAVED THE PIPELINE SHOULD PREFERABLY BE TUNNELLED OR PUNCHED UNDER THE ROOT SYSTEM. IF THE ROOT SYSTEM MUST BE CUT FOR TRENCHING AN APPROPRIATE PRUNING BACK OF BRANCHES MUST BE UNDERTAKEN TO PREVENT DEATH FROM WATER LOSS AND NUTRIENT IMBALANCE. THE TECHNIQUE FINALLY SELECTED MAY VARY FOR DIFFERENT TYPES OF TREES, ROOT SYSTEMS AND SIZES.

PROBLEM

RECOMMENDATION

4. EXPANSION OF ROW

EXPANSIONS OCCURRED IN AN ORCHARD, FOR EXTRA WORKING ROOM IN FLOODPLAIN AREAS, FOR EXTRA STORAGE AREAS ALONG HYDRO RIGHTS-OF-WAY, AND FOR RAIL AND ROAD CROSSINGS. ON MOST OCCASIONS, THESE EXPANSIONS WERE CARRIED OUT WITHOUT NOTIFICATION OR PERMISSION OF THE LANDOWNER.

BETTER PLANNING IS NEEDED TO LOCATE SPECIAL AREAS TO PLACE EXCESS EXCAVATED MATERIAL AND TO USE AS ASSEMBLING AREAS FOR PIPE. THESE SHOULD BE DECIDED UPON BY THE CONSULTANTS AND SHOULD BE CLEARLY MARKED BY SUCH METHODS AS A FLAG OR TAPE SYSTEM OR THROUGH THE USE OF SNOW FENCING. LANDOWNERS PERMISSION MUST BE OBTAINED FOR THESE AREAS.

5. ACCESS ACROSS THE ROW

A) ANIMAL ACCESS

CATTLE WERE OBSERVED FROM TIME TO TIME ON THE RIGHT-OF-WAY ADJACENT TO OPEN TRENCH. IN ADDITION, ON AT LEAST ONE OCCASION, THE DELAY BETWEEN BACKFILL AND CLEAN-UP LEFT THE RIGHT-OF-WAY IN SUCH A STATE THAT CATTLE COULD NOT CROSS. AT LEAST ONE LANDOWNER CLAIMED THAT AN ANIMAL FELL INTO THE OPEN TRENCHES.

TO PREVENT THE LIKELIHOOD OF ANIMALS FALLING INTO A TRENCH, THEY SHOULD NOT BE PERMITTED WITHIN THE ROW WORKING AREA. IF IT IS NECESSARY FOR THE ANIMALS TO GRAZE ADJACENT TO THIS AREA, APPROPRIATE TEMPORARY FENCING WHICH WILL BE DEPENDENT ON TYPE OF LIVE-STOCK, SHOULD BE INSTALLED.



PROBLEM

RECOMMENDATION

THIS COULD INCLUDE TEMPORARY ELECTRIC FENCING. IN ADDITION, CAREFUL NOTE SHOULD BE MADE OF AREAS WHERE IMMEDIATE OR CONTINUING ACCESS IS REQUIRED BY THE LANDOWNER. SUCH AREAS SHOULD BE RESTORED IMMEDIATELY. PROPER ACCESS AT CONVENIENT LOCATIONS FOR BOTH CATTLE AND MACHINERY MUST BE PROVIDED AND FENCED.

B) PRIVATE VEHICLE ACCESS

HEAVY FARM EQUIPMENT EXPERIENCED DIFFICULTY IN CROSSING THE CONSTRUCTION ROW ON OCCASION.

WHERE AREAS ARE IDENTIFIED THAT WILL BE SUBJECT TO HEAVY FARM EQUIPMENT TRAVEL. THOSE CROSSING ACCESS AREAS MUST BE SUITABLY PROTECTED TO PROVIDE EASE OF ACCESS. THIS MAY MEAN INSTALLATION OF ROCK OR WOODEN RIP-RAP UNDER

PROBLEM

RECOMMENDATION

CERTAIN CIRCUMSTANCES.

6. DUST FROM DRILLING

ALTHOUGH SUPPRESSORS WERE ORDERED INSTALLED BY BECHTEL, AT LEAST 1 CONTRACTOR CONTINUED DRILLING FOR A NUMBER OF WEEKS WITHOUT THEM, THUS EXCESSIVE DUST LEVELS WERE GENERATED. THIS WAS ESPECIALLY NOTICEABLE IN CERTAIN RESIDENTIAL AREAS AND NEAR HIGHWAYS. AS WELL, HEAVY DUST COATINGS ON TREES, SHRUBS AND GRASSES WAS OBSERVED IN THE BACKLOT AREAS.

AS REQUIRED IN THE SPECIFICATIONS, DUST SUPPRESSION EQUIPMENT IS NECESSARY. SUCH EQUIPMENT SHOULD BE INSTALLED PRIOR TO ANY DRILLING AND SHOULD BE USED THROUGHOUT. THIS IS ESPECIALLY REQUIRED IN URBAN SETTINGS. CONSULTANTS SHOULD CONSIDER THE EFFECTS ON VEGETATION BEFORE PERMITTING THE NON-USE OF SUPPRESSION EQUIPMENT IN NON-URBAN SETTINGS.

7. CHISEL PLOUGHING

INADEQUATE DEPTH OF CHISEL PLOUGHING TO RELIEVE SOIL COMPACTION WAS OBSERVED. IT APPEARED THE OPERATOR WAS ABLE TO ACHIEVE HIGHER GROUND SPEEDS BY MORE LIGHTLY WORKING THE SOILS.

EFFORTS SHOULD BE MADE TO MINIMIZE COMPACTION IN THE FIRST PLACE. WITH DUE CONSIDERATION FOR THE AGRICULTURAL SPECIFICATIONS, EQUIPMENT TO PULL THE CHISEL PLOUGH SHOULD BE SUFFIC-

PROBLEM

RECOMMENDATION

IENTLY POWERFUL TO ACHIEVE  
A DESIRED GROUND SPEED.  
CONTINUAL INSPECTION IS  
NECESSARY TO ENSURE THAT  
ADEQUATE DEPTH IS MAIN-  
TAINED. THE USE OF A  
SUBSOILER PRIOR TO REPLACE-  
MENT OF FIELD TILE SHOULD  
BE GIVEN FURTHER CONSIDER-  
ATION.\* STUDIES WILL BE  
REQUIRED TO DETERMINE THE  
BEST METHOD TO ALLEVIATE  
THE EFFECTS OF COMPACTION  
IN NATURAL AREAS (AREAS  
THAT WILL NOT BE WORKED FOR  
AGRICULTURAL PURPOSES).

8. ACCESS OF VEHICLES

DURING WET CONDITIONS

THE CONTINUAL USE OF VEHICLES  
ON WET RIGHT-OF-WAY CAUSES  
MIXING OF THE SUBSOILS WITH

IN THE FUTURE, SOME CHANGES  
IN THE CONSTRUCTION TECH-  
NIQUES USED, WILL BE

---

\* A SUBSOILER IS A MACHINE WHICH BREAKS UP COMPACTION IN THE  
SUBSOIL WITHOUT CAUSING MIXING OF THE TOPSOIL AND SUBSOIL.

PROBLEM

POTENTIAL FOR CHANGING THE SOIL STRUCTURE. DISTURBANCE RESULTED ESPECIALLY FROM VEHICLES, SUCH AS PIPE STRINGING TRUCKS.

RECOMMENDATION

NECESSARY. DURING EXCESSIVELY WET CONDITIONS, WHEN SPECIALIZED CONSTRUCTION EQUIPMENT THAT DOES NOT COMPACT OR MIX THE SOIL IS UNAVAILABLE, CONSTRUCTION SHOULD CEASE.

PIPE STRINGING SHOULD ONLY BE CARRIED OUT WITH THE USE OF A TRACKED VEHICLE RIGGED TO CARRY PIPE OR WITH OTHER VEHICLES THAT EXERT MINIMUM GROUND PRESSURE SUCH AS SOME OF THOSE PRESENTLY USED IN THE NORTH. USE OF SUCH VEHICLES SHOULD BE GENERALLY ENCOURAGED IN SOUTHERN CANADA FOR CONSTRUCTION UNDER MANY DIFFERENT CONDITIONS BECAUSE OF THEIR VERY LOW PRESSURE LEVELS. THIS WOULD UNDOUBTEDLY PROVE ADVANTAGEOUS TO BOTH AGRICULTURAL AND NATURAL AREAS.

PROBLEM

9. TEMPORARY STABILIZATION

TEMPORARY STABILIZATION MEASURES WERE NECESSARY TO ALLEVIATE EROSION, SLUMPING AND SLIPPAGE OF SOILS ON SLOPED AREAS WHERE FINAL RESTORATION COULD NOT BE IMMEDIATELY CARRIED OUT. TEMPORARY STABILIZATION MEASURES WERE NOT USED IN SOME LOCATIONS WHERE THEY SHOULD HAVE BEEN REQUIRED. IN OTHER AREAS WHERE THESE MEASURES HAD BEEN INSTALLED QUITE OFTEN WE FOUND THE MEASURES TO BE INEFFECTIVE BECAUSE OF IMPROPER PLACEMENT AND A POOR KNOWLEDGE OF REQUIREMENTS UNDER DIFFERENT ENVIRONMENTAL CONDITIONS. THE USE OF EARTH BERMS APPEARED TO BE THE MOST PREVALENT PREVALENT TEMPORARY STABILIZATION METHOD USED. WHEN 'CONDITIONS' (I.E., FROST) DID NOT PERMIT THE USE OF SUCH BERMS, MORE EXPENSIVE METHODS WERE NECESSARY. THESE CONDITIONS OFTEN OCCURRED BECAUSE OF THE DELAY BETWEEN THE BACKFILL CREW

RECOMMENDATION

TEMPORARY AND PERMANENT STABILIZATION PROCEDURES SHOULD BE DEVELOPED IN ADVANCE AND INCLUDED AS PART OF THE CONTRACT BID PACKAGE. THESE PROCEDURES SHOULD BE INCLUDED IN SITE SPECIFIC DRAWINGS AND SPECIFICATIONS. SUFFICIENT CLEAN-UP CREWS SHOULD BE AVAILABLE TO STABILIZE THE RIGHT-OF-WAY IMMEDIATELY AFTER BACKFILL. THIS IS ESPECIALLY IMPORTANT DURING FALL CONSTRUCTION. A SUFFICIENT NUMBER OF EARTH BERMS SHOULD BE APPLIED TO SLOPES TO ALLOW FOR POTENTIAL BERM FAILURES, AND IF FROST CONDITIONS DO NOT PERMIT THE USE OF EARTH BERMS, OTHER METHODS SUCH AS THE USE OF STRAW BALES OR SAND-BAGS AS BERMS, OR STAKED LOGS WITH A STRAW UNDER-PADDING SHOULD BE INSTITUTED.

PROBLEM

RECOMMENDATION

AND THE RIGHT-OF-WAY CLEAN-UP  
CREW.

10. OPEN TRENCH

ALTHOUGH THE SPECIFICATIONS  
(APPENDIX B, EC-3) NOTE THAT,  
"...TRENCHING SHALL NOT PRECEDE  
PIPE-LAYING BY MORE THAN THREE  
DAYS ...", A NUMBER OF VISITS  
IN 'NON-ROCK' AREAS SHOWED  
BETWEEN 12 AND 16 MILES OF OPEN  
TRENCH. THIS DISTANCE IS  
CONSIDERED TO BE BEYOND THE  
3-DAY LIMIT.

MAKE AVAILABLE METHODS TO  
TIGHTEN CONTROL ON THE  
TRENCHING CREW AND TO GIVE  
POWER TO THE FIELD INSPECT-  
TOR TO ENFORCE SHUTDOWN OF  
TRENCHING OPERATIONS IF  
THAT OPERATION PROCEEDS  
FASTER THAN THE PIPE STRING-  
ING, BACKFILLING AND  
RESTORATION CREWS.

11. RESTORATION

MANY OF THE PROBLEMS MENTIONED AND RECOMMENDATIONS MADE UNDER  
THIS HEADING FOR WATER COURSE AREAS APPLY TO LAND AS WELL. THE  
MOST PREVALENT PROBLEMS RELATED TO: DRAINAGE, STEEP SLOPE  
AREAS, TOPSOIL-SUBSOIL MIXING AND ROCK PICKING. MOST OF THE  
CONCERNS THAT OCCURRED DURING CONSTRUCTION ALSO REAPPEARED AS  
RESTORATION PROBLEMS WHEN NOT DEALT WITH PROPERLY IN THE FINAL  
RESTORATION PROGRAM. THESE ITEMS HAVE ALREADY BEEN DISCUSSED  
IN THIS SECTION AND MANY OF THESE PROBLEMS REAPPEAR AS LAND-  
OWNER COMPLAINTS IN STAGE TWO STUDIES.

2.2 STAGE TWO STUDIES  
THE LANDOWNER INTERVIEW STUDIES OF THE IPL  
SARNIA TO MONTREAL EXTENSION 1975-1976

2.2.1 INTRODUCTION AND RESEARCH METHODS

IN ORDER TO OBTAIN ADDITIONAL INFORMATION AS A FOLLOW-UP TO STAGE ONE STUDIES, IT WAS DECIDED THAT MINISTRY STAFF, UTILIZING A STANDARDIZED SERIES OF QUESTIONS AS A BASIS FOR DISCUSSION, WOULD CONDUCT PERSONAL INTERVIEWS WITH A REPRESENTATIVE SAMPLE OF LANDOWNERS ALONG THE PIPELINE ROUTE. THE INTERVIEWS SHOULD GENERATE ANSWERS TO QUESTIONS RAISED DURING THE PHYSICAL IMPACT STUDIES AND HOPEFULLY PROVIDE NEW KNOWLEDGE CONCERNING THE PROJECT AS A WHOLE.

THE INFORMATION FOR THE DESIGN OF THE QUESTIONNAIRE WAS DRAWN FROM A NUMBER OF SOURCES: THE STAGE I STUDIES; THE REPORTS AND OTHER SUBMISSIONS; TRANSCRIPTS OF THE NEB HEARINGS. WE ALSO MADE REFERENCE TO THE PROVINCIAL SUBMISSION TO THE NEB, FEB. 19, 1974; (SEE APPENDIX A); SPECIFICATIONS MANUAL, PART VI; (SEE APPENDIX B) AND COPIES OF LETTERS AND LEGAL AGREEMENTS PROVIDED BY IPL TO THE LANDOWNERS. (SEE APPENDIX C). THESE REFERENCES PROVIDE A COMPARISON BETWEEN THE INITIAL PLANNING OR PRE-CONSTRUCTION CONCERNS AND COMMITMENTS AND THE POST-CONSTRUCTION FINDINGS.

THE CONCLUSIONS DERIVED FROM THE INITIAL PHYSICAL ENVIRONMENTAL STUDY WERE BASICALLY RESPONSIBLE FOR THE CONTINUATION OF THE MONITORING PROJECT INTO THIS STAGE. THEY ARE:

1. IN LIGHT OF THE DETRIMENTAL ENVIRONMENTAL EFFECTS WHICH OCCURRED WE WOULD ASK THAT THE NEB GIVE MUCH GREATER WEIGHT AND CONSIDERATION TO ENVIRONMENTAL FACTORS IN FUTURE DECISION-MAKING CONCERNING APPLICATIONS TO CONSTRUCT PIPELINES IN THIS PROVINCE.
2. ALTHOUGH THE PROVINCE WAS VERY DETAILED IN ITS SUBMISSION TO THE BOARD AND IN ITS CROSS-EXAMINATION OF WITNESSES AND IN OBTAINING ORAL COMMITMENTS FROM THE APPLICANT AT THE HEARING, THE PROVINCE MUST, IN FUTURE, FRAME INTERVENTIONS BEFORE THE NEB SO AS TO ELICIT EVEN MORE EXPLICIT AND DETAILED RESPONSES AND COMMITMENTS RELATED TO PRODUCTION OF PROPER PLANNING, CONSTRUCTION AND RESTORATION DOCUMENTATION AND TO ADEQUATE REPORTING PROCEDURES;
3. IF COMMITMENTS MADE BY AN APPLICANT ARE NOT BINDING UNLESS CONFIRMED BY BOARD ORDERS; THUS THE BOARD SHOULD BE ASKED TO CONFIRM, BY ORDER, EACH AND EVERY COMMITMENT;
4. THE BOARD SHOULD DEFINE THE TYPE OF REPORTING PROCEDURE, THE CONTENTS OF SUCH REPORTS AND THE PHASING;
5. THE PROVINCE AND OTHER INTERESTED PARTIES SHOULD RECEIVE COPIES OF ALL AGRICULTURAL AND ENVIRONMENTAL REPORTS PERTAINING TO PLANNING;
6. THE CONTENTS OF 'PHASE III' (SITE SPECIFIC INFORMATION, SPECIFICATIONS, CONSTRUCTION PROCEDURES, ETC.) AND PHASE



IV (CONSTRUCTION AND RESTORATION, MONITORING AND INSPECTION) SHOULD HAVE BEEN BETTER DEFINED BY THE BOARD AND COPIES OF DOCUMENTS FILED UNDER THESE PHASES SHOULD HAVE BEEN DISTRIBUTED TO APPROPRIATE INTERVENORS.

7. A FAR MORE DETAILED 'PHASE II' IS REQUIRED. THIS DOCUMENT MIGHT BE KNOWN AS THE 'PLANNING AND PROCEDURES DOCUMENT' AND SHOULD BE COMPLETED WELL IN ADVANCE OF ANY CONSTRUCTION. THIS DOCUMENT SHOULD INCLUDE SITE SPECIFIC DRAWINGS AND REFERENCES ALONG THE RIGHT-OF-WAY, DETAILING THE MEASURES TO BE TAKEN DURING AND UPON COMPLETION OF CONSTRUCTION. THIS DOCUMENT SHOULD BECOME PART OF THE BID PACKAGE FOR THE CONTRACTOR;
8. THE BOARD, IN REJECTING ONTARIO'S OFFER OF ENVIRONMENTAL AND AGRICULTURAL INSPECTORS, SHOULD HAVE ENSURED THAT THEIR OWN INSPECTORS WERE PROPERLY QUALIFIED AND IN THE FIELD WHEN EVER CONSTRUCTION WAS TAKING PLACE;
9. THE BOARD SHOULD ADVISE THE PROVINCE AND OTHER INTERESTED PARTIES WHEN ORDERS ARE ISSUED OR IMPORTANT PROCEDURAL CHANGES ARE MADE;
10. THE BOARD SHOULD PREPARE A DETAILED LIST OF ALL UNDERTAKINGS BINDING ON AN APPLICANT;
11. THE BOARD MUST BE ASSURED THAT THERE IS AN ADEQUATE EDUCATION PROGRAMME UNDERTAKEN WITH THE CONTRACTORS;

12. THERE SHOULD BE SOME PROCEDURE TO PENALIZE THE APPLICANT WHOSE CONTRACTORS VIOLATE BOARD ORDERS AND/OR CONSTRUCTION SPECIFICATIONS;

THE BASIS FOR THESE CONCLUSIONS WAS OUR ANALYSIS OF WRITTEN AGREEMENTS AND RESPONSIBILITIES, AND FIELD INVESTIGATIONS. IN REVIEWING THIS INFORMATION, IT WAS DEDUCED THAT OUR INTERVIEW QUESTIONS SHOULD DEAL WITH THE FOUR MAJOR PHASES OF THE IPL PROJECT. THESE INCLUDED PLANNING, NEGOTIATIONS, CONSTRUCTION AND RESTORATION. THUS, QUESTIONS WERE FRAMED TO PROMOTE A DISCUSSION OF ALL OF THESE PHASES, WITH RESPECT TO BOTH LAND-OWNER CONCERNS IN GENERAL AND ENVIRONMENTAL PROBLEMS EITHER RELATED TO OR DISTINCT FROM SUCH CONCERNS. A FEW QUESTIONS WERE OPEN-ENDED TO ALLOW LANDOWNERS TO EXPRESS GENERAL SUGGESTIONS WITH REGARD TO ANY PHASE OF THE PIPELINE PROJECT. THE MAJORITY OF QUESTIONS WERE DESIGNED TO ALLOW THE INTERVIEWS TO BE STANDARDIZED IN ORDER TO PRODUCE SIMPLE AND STRAIGHTFORWARD INFORMATION. THIS QUESTIONNAIRE CAN BE FOUND IN APPENDIX D.

THE SAMPLE OF LANDOWNERS TO BE INTERVIEWED ALONG THE PIPELINE ROUTE WAS RANDOMLY CHOSEN FROM A LIST OF APPROXIMATELY 2,000 LANDOWNERS GIVEN TO THE MINISTRY BY BECHTEL.

THE SAMPLE WAS SELECTED BY SPREAD AREA. THE SIZE OF THE SAMPLE WAS A PERCENTAGE OF THE TOTAL NUMBER OF LANDOWNERS IN EACH SPREAD. IT WAS FELT THAT SELECTING THE RANDOM SAMPLE BY SPREAD AREA WOULD ENSURE THAT THERE WAS A FAIR DISTRIBUTION OF PEOPLE SURVEYED PER SPREAD AREA RIGHT ACROSS ONTARIO. THIS SECTION PROCEDURE WOULD ALLOW FOR IDENTIFICATION OF DIFFERENCES

IN PROJECT MANAGEMENT BETWEEN THE VARIOUS CONTRACTORS INVOLVED IN THE PROJECT. IN TOTAL, APPROXIMATELY 300 LANDOWNERS WERE SELECTED. IN THIS REPORT WE HAVE REFERRED TO THE SAMPLE OF LANDOWNERS SELECTED AS EITHER THE 'RESPONDENTS' OR 'THE LANDOWNERS'. THE SAMPLE SIZE REPRESENTS APPROXIMATELY 14% OF THE TOTAL NUMBER OF ONTARIO LANDOWNERS. THE STUDY DID NOT INCLUDE THOSE AFFECTED IN QUEBEC.

THE INTERVIEWS BEGAN IN LATE JUNE, 1976 AND WERE COMPLETED BY LATE SEPTEMBER. AT THAT TIME, OIL WAS FLOWING THROUGH THE LINE AND, ACCORDING TO BECHTEL, THE RESTORATION PROCESS HAD ALMOST BEEN COMPLETED IN SPREAD 1 AND HAD COMMENCED IN SPREAD 2. THE SURVEY STARTED IN SPREAD 1 TO CO-ORDINATE AS CLOSELY AS POSSIBLE WITH THE COMPLETION OF THE COMPANY'S RESTORATION PROCESS. THIS PROCEDURE PROVED SUCCESSFUL UNTIL THE SURVEY REACHED THE SPREAD 5 AND 6 AREAS IN MID-SEPTEMBER. CERTAIN FACTORS, INCLUDING BAD WEATHER CONDITIONS, HAD CAUSED CONSIDERABLE DELAY IN THE CLEANUP AND RESTORATION PROCESS ON THESE TWO SPREADS.

WHENEVER POSSIBLE, LANDOWNERS WERE CONTACTED BY TELEPHONE TO ARRANGE CONVENIENT INTERVIEW TIMES AND TO OBTAIN DIRECTIONS TO THEIR PROPERTIES.

IN INTERVIEW SESSIONS, LANDOWNERS WERE PRESENTED WITH A LETTER WHICH EXPLAINED THE PURPOSE OF THE SURVEY. THE RESEARCHER ASKED THE QUESTIONS AND AN ASSISTANT RECORDED THE RESPONSES OF LANDOWNERS AS CLOSELY AS POSSIBLE. WITH A FEW EXCEPTIONS, INTERVIEW SESSIONS RANGED BETWEEN 15 MINUTES AND

ONE HOUR. A TOTAL OF 227 LANDOWNERS WERE PERSONNALLY INTERVIEWED AND 23 OTHERS MAILED IN THEIR QUESTIONNAIRES, FOR A TOTAL OF 250 COMPLETED QUESTIONNAIRES. 50 LANDOWNERS FROM THE 300 ORIGINALLY SELECTED COULD NOT BE INTERVIEWED FOR ONE REASON OR ANOTHER (I.E., COULD NOT BE LOCATED). THE RESPONSE RATE WAS EXTREMELY GOOD.

A SEPARATE QUESTIONNAIRE AND FORWARDING LETTER WERE PREPARED FOR INTERVIEWS WITH THE 37 SEPARATE REPRESENTATIVES FROM THE FOLLOWING GROUPS: BOROUGHS, CITY, CONSERVATION AUTHORITIES, COUNTIES, ONTARIO HYDRO, REGIONAL MUNICIPALITIES, AND TOWNSHIPS. (SEE APPENDIX D) MOST OF THESE LANDOWNERS WERE LOCATED AT THE END OF SPREAD 2, THROUGHOUT SPREAD 3, AND AT THE BEGINNING OF SPREAD 4. ALTHOUGH THESE INTERVIEWS WERE CONDUCTED AFTER THE INDIVIDUAL LANDOWNERS INTERVIEWS WERE COMPLETED THESE RESPONDENTS' NAMES WERE INITIALLY SELECTED IN THE RANDOM SAMPLE ALONG WITH ALL OTHER LANDOWNERS.

## 2.2.2 STAGE TWO STUDY FINDINGS:

DUE TO POSSIBLE DIFFERENCES IN LAND AGENTS, CONSTRUCTION CONTRACTORS, WEATHER CONDITIONS AND GEOGRAPHIC CHARACTERISTICS, INFORMATION FROM EACH SPREAD IS DESCRIBED SEPARATELY. IN ADDITION, THE INFORMATION GATHERED DURING THE INTERVIEWS IS PRESENTED IN THE FOLLOWING FORMAT.

- A) PRIVATE LANDOWNERS FROM EACH SPREAD AREA.
- B) PUBLIC LANDOWNERS SUCH AS: BOROUGHS, TOWNSHIPS, CONSERVATION AUTHORITIES, ETC. THE SPREAD 3 RIGHT-OF-WAY, MAINLY OWNED BY ONTARIO HYDRO IS INCLUDED IN THIS CATEGORY.

2.2.2 A) PRIVATE LANDOWNER FINDINGS

SPREAD 1 TO SPREAD V1

GENERAL FINDINGS

THE FOLLOWING GENERAL FINDINGS RESULT FROM THE INDIVIDUAL LANDOWNER RESPONSES IN ALL SPREAD AREAS AND ARE NOT REPEATED AGAIN IN THIS ANALYSIS.

- A) OVER 90 PERCENT OF THE LANDOWNERS LIVED ON THEIR PROPERTY.
- B) OVER 90 PERCENT OF THE LANDOWNERS WERE ENGAGED IN AGRICULTURE.
- C) THE AVERAGE SIZE OF A FARM WAS APPROXIMATELY 100 ACRES.
- D) THE AVERAGE AMOUNT OF LAND ACQUIRED FROM A LANDOWNER FOR THE PIPELINE ROW IN SPREADS 1 AND 2, WHERE THE PIPELINE COMPANY ALREADY OWNED A 60-FOOT ROW, WAS APPROXIMATELY .5 ACRES AND IN SPREADS 4 TO 6 APPROXIMATELY 1.5 ACRES.
- E) OVER 75 PERCENT OF THE LANDOWNERS HAD NOT HEARD ANYTHING ABOUT THE NEB HEARINGS IN OTTAWA TO DISCUSS THE APPLICATION OF IPL FOR A 'CERTIFICATE OF CONVENIENCE AND NECESSITY'. HOWEVER, 20 PERCENT OF THOSE INTERVIEWED HAD HEARD RUMOURS ABOUT THE POSSIBILITY OF A NORTHERN ROUTE. ONLY 5 PERCENT HAD KNOWN ABOUT THE PURPOSE OF THE HEARINGS. ONE LANDOWNER HAD ATTENDED THE HEARINGS IN OTTAWA.

- f) OVER 94 PERCENT OF THE LANDOWNERS INTERVIEWED HAD NO CONTACT WITH ANY INSPECTORS OR OBSERVERS FROM THE PROVINCIAL OR FEDERAL GOVERNMENT, OR INSPECTORS FROM BECHTEL CANADA LTD.
- g) MOST LANDOWNERS INTERVIEWED DID NOT KEEP A RECORD OF HOW OFTEN THEY CHECKED CONSTRUCTION PROCEDURES. HOWEVER, 58 PERCENT OF THE LANDOWNERS DID CHECK CONSTRUCTION PROCEDURES AT SOME TIME.
- h) OVER 60 PERCENT OF THE LANDOWNERS, IN ANSWER TO ANTICIPATED FUTURE PROBLEMS, STATED THAT THEY FELT THEIR LAND WOULD NEVER RETURN TO ITS ORIGINAL PRODUCTIVITY.

IN THE INTERVIEWS, ALL LANDOWNERS WERE ASKED TO OFFER RECOMMENDATIONS WHICH THEY FELT MIGHT IMPROVE ANY ASPECT OF CURRENT PRACTICE AND PROCEDURE. THE FOLLOWING SECTIONS PRESENT THE GENERAL FINDINGS AND RECOMMENDATIONS BY SPREAD AREA.

#### SPREAD 1, SARNIA TO INGERSOLL

##### GENERAL FINDINGS

IN SPREAD 1, 61 PERCENT OF THE LANDOWNERS, THE HIGHEST NUMBER OF ALL THE SPREADS, ATTENDED PUBLIC MEETINGS. AS MENTIONED PREVIOUSLY MOST OF THESE MEETINGS WERE ORGANIZED BY THE OFA. ALMOST 35 PERCENT STATED THAT THEY ATTEMPTED TO OBTAIN ADDITIONAL INFORMATION ABOUT THE PIPELINE PROJECT (PRESUMABLY) WITHOUT SUCCESS. A FEW LANDOWNERS ORGANIZED PUBLIC

MEETINGS AND SOME LANDOWNER CONCERNS WERE PRESENTED IN VARIOUS NEWSPAPERS. THE MAIN SOURCES OF INFORMATION WERE PUBLIC MEETINGS, EXPERIENCE WITH TWO PREVIOUS IPL LINES, WORD-OF-MOUTH, AND PIPELINE COMPANY OFFICIALS. THE ONTARIO FEDERATION OF AGRICULTURE (OFA) HELD PUBLIC MEETINGS AT SEVERAL LOCATIONS. APPROXIMATELY 25 PERCENT OF THE LANDOWNERS SAMPLED INDICATED THAT THEY HAD RELIED SOLELY ON PIPELINE COMPANY OFFICIALS FOR INFORMATION. ABOUT 39 PERCENT REPORTED THAT THEY DID NOT RECEIVE ANY WRITTEN INFORMATION PRIOR TO AND DURING NEGOTIATIONS FROM THE PIPELINE OFFICIALS. LEGAL AGREEMENTS WERE EVIDENTLY NEGOTIATED AFTER THIS PERIOD. ACCORDING TO THE SURVEY, A TOTAL OF 29 PERCENT OF THE OWNERS RECEIVED WRITTEN INFORMATION FROM THE PIPELINE COMPANY.

ONLY 9 PERCENT HAD LAND EXPROPRIATED AND HAD ALSO ATTENDED THE EXPROPRIATION HEARINGS.

ALMOST 60 PERCENT OF THE LANDOWNERS REPORTED THAT THEY WERE NOT SHOWN A FINAL PLAN OF WHERE THE PIPELINE WOULD RUN THROUGH THEIR PROPERTIES BEFORE THEY SIGNED THE FINAL AGREEMENT. HOWEVER, LANDOWNERS IN SPREADS 1 AND 2 STATED THAT THEY KNEW THE LINE WOULD RUN SOMEWHERE NEAR THE OTHER LINES. EXACTLY 50 PERCENT OF THE LANDOWNERS REPLIED THAT THEY DID NOT HAVE A COMPANY REPRESENTATIVE TAKE NOTE OF AREAS ON THE PROPERTY THAT NEEDED SPECIAL CONSIDERATION. WE ARE NOT CERTAIN OF THE REASON FOR THIS. IT MAY BE THAT LANDOWNERS

FELT CONFIDENT THAT THE COMPANY WOULD MANAGE THESE AREAS APPROPRIATELY, AND DID NOT ANTICIPATE ANY PROBLEMS. IT IS ALSO POSSIBLE THAT THESE LANDOWNERS WERE UNAWARE OF THEIR RIGHT TO REQUEST ADDITIONAL WORK OR THE MANNER IN WHICH TO REQUEST IT. SEVENTY-ONE PERCENT OF THE RESPONDENTS STATED THAT THEY FELT ANOTHER PIPELINE IN ADDITION TO THE APPROVED IPL LINE COULD NOT BE BUILT IN THE 60-FOOT EASEMENT.

OVER 43 PERCENT REPLIED THAT THEY WERE NOT NOTIFIED EXACTLY WHEN CONSTRUCTION WOULD COMMENCE. APPROXIMATELY 44 PERCENT OF THE SAMPLE STATED THAT THE AGREED UPON EASEMENT CHANGED COURSE DURING CONSTRUCTION. OF THESE LANDOWNERS, 80 PERCENT OF THE SAMPLE INDICATED THAT THEY WERE NOT NOTIFIED OF THESE CHANGES BY EITHER THE CONSTRUCTION CONTRACTORS OR PIPELINE COMPANY OFFICIALS.

OVER 65 PERCENT OF THE RESPONDENTS HAD EXPERIENCED UNEXPECTED PROBLEMS OF SOME SORT ON THEIR PROPERTIES DURING THE COURSE OF CONSTRUCTION. THE MAIN PROBLEMS WERE: MIXING OF SUBSOIL AND TOPSOIL, TILE BREAKAGE AND INSUFFICIENT REPAIRS, TRENCH BEING LEFT OPEN FOR TOO LONG A PERIOD.

#### RECOMMENDATIONS:

##### NEGOTIATION PROCEDURES

IN ONE QUESTION THE LANDOWNER WAS ASKED TO OFFER RECOMMENDATIONS FOR IMPROVING FUTURE NEGOTIATION PROCEDURES. THE



RECOMMENDATIONS OFFERED DEALT WITH THREE AREAS OF NEGOTIATIONS: INFORMATION, MONEY AND THE EXPROPRIATION PROCESS. MOST LANDOWNERS WANTED A BROADER, MORE ACCESSIBLE INFORMATION BASE ON THE PIPELINE PROJECT THAN WAS AVAILABLE. REASONS FOR CONSTRUCTING THE PIPELINE AND CHOOSING A PARTICULAR ROUTE SHOULD BE EXPLAINED. IDENTIFICATION OF LANDOWNER RIGHTS, LANDOWNER DUTIES, AND LEGALITY OF COMMITMENTS PLACED ON IPL, BECHTEL AND VARIOUS CONTRACTORS, WERE ISSUES THAT LANDOWNERS WANTED CLARIFIED.

SECONDLY, IMPROVEMENTS IN METHODS OF COMMUNICATING THIS INFORMATION WERE REQUESTED. SUGGESTIONS FOR IMPROVEMENT RANGED FROM A SERIES OF PUBLIC MEETINGS TO BE HELD PRIOR, DURING AND AFTER THE CONSTRUCTION PROCESS; TO HAVING MORE INFORMATIVE LAND AGENTS; AND FINALLY, TO HAVING ONE ACCESSIBLE AND POWERFUL AGENT TO DEAL WITH AT ALL TIMES.

THE MOST COMMON RECOMMENDATION CONCERNED A DEMAND FOR STANDARDIZATION IN ROW PAYMENTS. LANDOWNERS SUGGESTED THAT LAND PAYMENTS WERE AWARDED ON AN ARBITRARY BASIS BY LAND AGENTS. BETTER APPRAISAL METHODS FOR DETERMINING LAND VALUES, ESPECIALLY IN TERMS OF A MORE CLOSELY DEFINED LAND VALUE CATEGORY SYSTEM, WAS CALLED FOR BY SEVERAL RESPONDENTS. SEVERAL LANDOWNERS ALSO FELT THAT ALL DAMAGE PAYMENTS FROM PREVIOUS IPL CONSTRUCTION SHOULD BE SETTLED BEFORE NEGOTIATING FOR ANOTHER LINE.

LANDOWNERS COMMENTED THAT EXPROPRIATION HEARINGS COULD NOT EFFECTIVELY DEAL WITH THEIR COMPLAINTS AND THAT THEY WERE SET UP TO THE ADVANTAGE OF THE PIPELINE COMPANY.

RECOMMENDATIONS:

CONSTRUCTION PROCEDURES

IN ANOTHER QUESTION THE RESPONDENTS WERE ASKED TO OFFER SUGGESTIONS FOR IMPROVING FUTURE PIPELINE CONSTRUCTION PROCEDURES.

BETTER COMMUNICATION BETWEEN CONSTRUCTION WORKERS, IPL, AND BECHTEL WAS AGAIN FELT TO BE OF MAJOR IMPORTANCE. LANDOWNERS WANTED TO HAVE AVAILABLE SOIL SPECIALISTS AND ACCESS TO REPORTS AND DOCUMENTATION ON THEIR PARTICULAR PROPERTY.

LANDOWNERS FELT THAT THE PIPELINE SHOULD NOT BE CONSTRUCTED IN WET WEATHER CONDITIONS. CONTRACT BIDS SHOULD INCLUDE CONTINGENCY DAYS FOR BAD WEATHER CONDITIONS. TOPSOIL SHOULD BE SEPARATED FROM SUBSOIL IN A MORE EFFICIENT MANNER. CONSTRUCTION IN TILED AREAS SHOULD BE PLANNED, AND CAREFULLY IMPLEMENTED.

OVER 56 PERCENT OF THE LANDOWNERS REPORTED THAT THEY FELT RESTORATION WAS NOT COMPLETED ON THEIR PROPERTY. YET, ACCORDING TO BECHTEL, CLEAN UP WAS ALMOST COMPLETE IN SPREAD ONE AT THIS TIME (SEE PAGE 61 PAR. 2). FORTY-SEVEN PERCENT OF THE LANDOWNERS HAD SIGNED THE 'RECEIPT AND RELEASE FOR DAMAGES' FORM. SOME OF THE LANDOWNERS WHO HAD SIGNED ALTHOUGH THE

CLEAN-UP AND PIPELINE COMPANY OFFICIALS WOULD RETURN AT A LATER DATE TO RESTORATION WERE NOT YET COMPLETED, STATED THAT THEY WERE TOLD THE COMPLETE DAMAGE SETTLEMENTS. OTHERS STATED THAT PAST EXPERIENCE WITH PIPELINE COMPANIES HAD TAUGHT THEM THAT IF THEY DIDN'T TAKE THE MONEY FOR DAMAGES NOW, THEN THEY WOULD PROBABLY NEVER SEE THE AGENTS AGAIN. ALMOST 57 PERCENT OF TH LANDOWNERS WERE NOT YET SATISFIED WITH THE RESTORATION PROCESS OVER 56 PERCENT OF THE LANDOWNERS SAID THAT IPL DID NOT HAVE CONTINUING PROGRAM TO MONITOR LAND RECOVERY.

#### RECOMMENDATIONS:

##### RESTORATION PROCEDURES

IN ANOTHER QUESTION THE LANDOWNERS WERE ASKED TO OFFER SUGGESTIONS FOR IMPROVING FUTURE PIPELINE RESTORATION PROCEDURES.

LANDOWNERS SUGGESTED THAT THEY SHOULD BE UNDER NO OBLIGATION TO SIGN DAMAGE FORMS UNTIL ALL DAMAGES BECOME APPARENT. THREE SUGGESTIONS FOR IMPROVEMENT IN RESTORATION TECHNIQUES WERE OFFERED:

- A) BETTER TOPSOIL REPLACEMENT;
- B) MORE EFFICIENT STONE REMOVAL;
- C) A MORE THOROUGH CLEAN-UP PROCESS (I.E., CHISEL PLOWING THE LAND THREE TIMES INSTEAD OF ONCE).

## SPREAD 11, INGERSOLL TO MISSISSAUGA

### GENERAL FINDINGS

IN SPREAD 2, 32 PERCENT OF THE LANDOWNERS ATTENDED PUBLIC MEETINGS CONCERNING THE PIPELINE. MOST OF THESE MEETINGS HAD BEEN ORGANIZED BY ONTARIO FEDERATION OF AGRICULTURE (OFA). ONLY 16 PERCENT OF THE SAMPLE ATTEMPTED TO OBTAIN ADDITIONAL INFORMATION. AGAIN, THE MAIN SOURCES OF INFORMATION WERE PAST EXPERIENCE WITH THE PIPELINE COMPANY OFFICIALS, PUBLIC MEETINGS AND WORD-OF-MOUTH. APPROXIMATELY 38 PERCENT OF THE RESPONDENTS RELIED SOLELY ON THE PIPELINE COMPANY OFFICIALS FOR INFORMATION.

OVER 47 PERCENT OF THESE LANDOWNERS DID NOT RECEIVE ANY WRITTEN INFORMATION FROM THOSE COMPANY OFFICIALS PRIOR TO OR DURING NEGOTIATIONS. A TOTAL OF 39 PERCENT RECEIVED WRITTEN INFORMATION FROM THE PIPELINE COMPANY. LANDOWNERS' REASONS FOR NOT ATTEMPTING TO OBTAIN ADDITIONAL INFORMATION CENTERED ON THE FACT THAT THERE WAS LITTLE AN INDIVIDUAL COULD DO ABOUT STOPPING THE PIPELINE. TWENTY-SEVEN PERCENT OF THE RESPONDENTS FELT THAT ANOTHER PIPELINE COULD NOT BE BUILT IN THE 60-FOOT WIDE EASEMENT.

NO LANDOWNERS INTERVIEWED WENT TO THE EXPROPRIATION HEARINGS. OVER 65 PERCENT OF THE RESPONDENTS HAD NOT HEARD OF THE EXPROPRIATION HEARINGS. READERS SHOULD NOTE THAT NOTIFICATION IS ONLY REQUIRED FOR THOSE WHO ARE EXPROPRIATED.

OVER 67 PERCENT OF THE LANDOWNERS WERE NOT SHOWN A FINAL PLAN OF WHERE THE PIPELINE WOULD RUN THROUGH THEIR PROPERTIES. HOWEVER, AS WAS THE CASE IN SPREAD 1, LANDOWNERS STATED THAT

THEY KNEW THE LINE WOULD RUN SOMEWHERE NEAR THE EXISTING LINE(S). OVER 54 PERCENT OF THE RESPONDENTS HAD A REPRESENTATIVE OF IPL TAKE NOTE OF AREAS ON THE PROPERTY THAT NEEDED SPECIAL CONSIDERATION.

### RECOMMENDATIONS:

#### NEGOTIATION PROCEDURES

RECOMMENDATIONS FOR IMPROVING NEGOTIATIONS FOCUSED ON THE INFORMATION PROCESS. FOR EXAMPLE: MAKING ALL INFORMATION ABOUT THE PIPELINE PUBLIC, DEALING WITH ONLY ONE OR TWO COMPANY PEOPLE DURING THE COURSE OF NEGOTIATIONS (SO THE LANDOWNERS KNOW THAT THEY ARE SPEAKING TO THE APPROPRIATE PERSON), IMPROVING LAND AGENTS' TECHNIQUES FOR ACQUIRING EASEMENTS. THE STANDARDIZATION OF LAND VALUES AND A GENERAL INCREASE IN THE MONIES AWARDED FOR EASEMENTS WERE REQUESTED BY SEVERAL LANDOWNERS. FINALLY, A FEW LANDOWNERS EXPRESSED THE NEED TO HAVE MORE INFORMATION AVAILABLE ON THE EXPROPRIATION HEARINGS.

ALMOST 65 PERCENT OF THE LANDOWNERS SAID THAT THEY WERE NOTIFIED WHEN CONSTRUCTION WOULD COMMENCE. OVER 48 PERCENT OF THE SAMPLE STATED THAT THE AGREED UPON EASEMENT CHANGED COURSE DURING CONSTRUCTION. OF THESE LANDOWNERS, 66 PERCENT CLAIMED THAT THEY WERE NOT NOTIFIED OF THESE CHANGES. SLIGHTLY OVER 62 PERCENT OF THE RESPONDENTS REPORTED HAVING EXPERIENCED UNEXPECTED PROBLEMS ON THEIR PROPERTIES DURING THE CONSTRUCTION PROCESS. THE MAIN PROBLEMS WERE: LOSS OF ACCESS TO CERTAIN PARTS OF FARMS; COMPACTED SOIL; ADDITIONAL LAND AND TIMBER TAKEN; TRENCHES FILLED WITH WATER; TRENCH EROSION; LIVESTOCK LOST; AND TILES BROKEN.

RECOMMENDATIONS:

CONSTRUCTION PROCEDURES

THE MAIN RECOMMENDATIONS WERE THE EDUCATION OF CONSTRUCTION WORKERS IN ENVIRONMENTAL CONSIDERATIONS AND A BETTER ENFORCEMENT SYSTEM FOR ENSURING THAT CONSTRUCTION WORK WAS ADEQUATELY COMPLETED. CERTAIN CONSTRUCTION TECHNIQUES SHOULD BE IMPROVED: GROUND WORKING TECHNIQUES, AVOIDING WET WEATHER CONDITIONS, IMPROVING FENCE CUTTING AND REPAIR SYSTEMS, TILE REPAIR, AND A CO-ORDINATED SYSTEM BETWEEN TRENCHING AND BACKFILLING OPERATIONS TO AVOID FLOODING AND EROSION.

ALMOST 60 PERCENT OF THE LANDOWNERS REPORTED THAT THE CLEANUP ON THEIR PROPERTY WAS BASICALLY COMPLETED. EXACTLY 54 PERCENT OF ALL THE LANDOWNERS HAD SIGNED THE 'RECEIPT AND RELEASE FOR DAMAGES' FORM. SLIGHTLY OVER 54 PERCENT OF ALL THE LANDOWNERS WERE NOT SATISFIED WITH THE RESTORATION PROCESS. AGAIN, AS MANY AS 54 PERCENT OF THE LANDOWNERS APPARENTLY DID NOT KNOW THAT IPL HAD A PROGRAM TO MONITOR RECOVERY OF THEIR LAND.

RECOMMENDATIONS:

RESTORATION PROCEDURES

LANDOWNERS SUGGESTED THAT BETTER METHODS ARE NEEDED FOR ENFORCEMENT OF ORIGINAL AGREEMENTS, PERHAPS BY BETTER CONTACT BETWEEN FARMERS, AGENTS AND INSPECTORS. AGAIN, LANDOWNERS FELT THAT ONLY ONE AGENT SHOULD DEAL WITH LANDOWNERS. BETTER METHODS FOR SOIL REPLACEMENT AND STONE PICK-UP, COULD BE

INSTITUTED. SEVERAL LANDOWNERS FELT THAT UNNECESSARY SLOPPINESS IN CONSTRUCTION WORK COULD BE ELIMINATED IF THE FOREMAN FOR CONSTRUCTION WAS THE SAME ONE FOR CLEAN-UP.

#### SPREAD IV - PICKERING TO TRENTON

##### GENERAL FINDINGS

IN SPREAD 4, ONLY 18 PERCENT OF THE LANDOWNERS ATTENDED PUBLIC MEETINGS. ALMOST 29 PERCENT ATTEMPTED TO OBTAIN ADDITIONAL INFORMATION ABOUT THE PIPELINE PROJECT. THE MAIN SOURCES OF INFORMATION WERE LOCAL MEETINGS WITH A FEW CONCERNED FARMERS, PIPELINE OFFICIALS, LAWYERS, PAST EXPERIENCE WITH THE TRANS-CANADA AND TRANSNORTHERN PIPELINE COMPANIES, AND WORD-OF-MOUTH. APPROXIMATELY 42 PERCENT OF THE LANDOWNERS STATED THAT THEY RELIED SOLELY ON THE PIPELINE COMPANY OFFICIALS FOR INFORMATION. ABOUT 47 PERCENT OF THESE LANDOWNERS STATED THAT THEY DID NOT RECEIVE ANY WRITTEN INFORMATION FROM THE PIPELINE COMPANY OFFICIALS PRIOR TO OR DURING NEGOTIATIONS. A TOTAL OF 36 PERCENT OF THE RESPONDENTS RECEIVED WRITTEN INFORMATION FROM THE PIPELINE COMPANY.

OVER 10 PERCENT OF THE RESPONDENTS IN THE SPREAD AREA HAD THEIR LAND EXPROPRIATED BY IPL. REASONS FOR BEING EXPROPRIATED WERE VARIED:

- COMPANY DID NOT OFFER ENOUGH MONEY FOR LAND, ESPECIALLY IN TERMS OF POTENTIAL REAL ESTATE VALUE;
- OPPOSED TO MULTIPLE PIPELINE CLAUSE AND FELT LANDOWNERS SHOULD BE MADE AWARE OF THE FACT THAT MORE THAN ONE PIPELINE COULD BE BUILT IN THE 60-FOOT EASEMENT;

- ONE LANDOWNER HAD NOT BEEN APPROACHED BY ANY NEGOTIATORS, HE CLAIMS THAT HE WAS JUST SERVED WITH AN EXPROPRIATION NOTICE.

OVER 53 PERCENT OF THE RESPONDENTS HAD NOT HEARD OF THE EXPROPRIATION HEARINGS. (SEE P.70, PAR.2)

OVER 42 PERCENT OF THE LANDOWNERS SAID THAT THEY WERE NOT SHOWN A FINAL PLAN OF WHERE THE PIPELINE WOULD RUN THROUGH THEIR PROPERTY BEFORE THEY SIGNED THE FINAL EASEMENT. EXACTLY 56 PERCENT OF THE LANDOWNERS EITHER STATED THAT THEY DID NOT KNOW IF ANOTHER PIPELINE COULD BE BUILT IN A 60-FOOT EASEMENT ON THEIR PROPERTY OR THAT ANOTHER ONE COULD DEFINITELY NOT BE BUILT IN THE EASEMENT. OVER 34 PERCENT OF THE RESPONDENTS DID NOT HAVE A COMPANY REPRESENTATIVE NOTE AREAS ON THEIR PROPERTY THAT NEEDED SPECIAL CONSIDERATION.

#### RECOMMENDATIONS:

##### NEGOTIATION PROCEDURES

RECOMMENDATIONS WERE SUGGESTED FOR IMPROVING THE INFORMATION PROCESS. LANDOWNERS RE-EMPHASIZED THE NEED FOR ORGANIZED PUBLIC MEETINGS TO INFORM LANDOWNERS OF THEIR RIGHTS. REQUESTS WERE ALSO MADE FOR A LIST OF APPROPRIATE CONTACTS AND FOR MORE KNOWLEDGEABLE LAND AGENTS. THE MAJOR MONETARY RECOMMENDATION WAS A CALL FOR STANDARDIZATION OF LAND PRICING, BASED ON: QUALITY OF LAND; SOIL; FRONTAGE; ETC. SEVERAL LANDOWNERS SUGGESTED THAT AN INDEPENDENT GOVERNMENTAL BODY COULD ASSESS APPROPRIATE LAND VALUES. SEVERAL LANDOWNERS



FELT THAT IF THE PIPELINE COMPANY WOULD NOT INFORM LANDOWNERS OF THEIR RIGHTS, THEN LEGAL ASSISTANCE WAS A NECESSARY ALTERNATIVE. LANDOWNERS ALSO FELT THAT ALL UNSETTLED DAMAGE PAYMENTS FROM PREVIOUS LINES SHOULD BE SETTLED BEFORE NEGOTIATING FOR ANOTHER LINE.

OVER 76 PERCENT OF THE LANDOWNERS SAID THEY WERE NOTIFIED WHEN CONSTRUCTION WOULD START. ALMOST 40 PERCENT OF THE LANDOWNERS HAD ADDITIONAL LAND TAKEN DURING THE CONSTRUCTION PROCESS. OVER 87 PERCENT OF THESE LANDOWNERS CLAIM THAT THEY WERE NOT NOTIFIED BY CONTRACTORS THAT ADDITIONAL LAND WOULD BE REQUIRED.

JUST UNDER 58 PERCENT OF THE LANDOWNERS EXPERIENCED UNEXPECTED PROBLEMS ON THEIR PROPERTY. ONE MAJOR PROBLEM RELATED TO THE TAKING OF ADDITIONAL LAND WAS THAT TREES WERE CUT DOWN WITHOUT THE LANDOWNER'S PERMISSION. OTHER COMPLAINTS OF LANDOWNERS WERE AS FOLLOWS: TRENCH LEFT OPEN TOO LONG; INADEQUATE TEMPORARY FENCING, SOIL COMPACTION; DEBRIS LEFT BY CONSTRUCTION CREWS; AND WATERCOURSE AND ROADWAY DAMAGE.

#### RECOMMENDATIONS:

##### CONSTRUCTION PROCEDURES

THE MAJOR RECOMMENDATION IN THE SPREAD AREA EVOLVED AROUND THE LEGAL ASPECTS OF THE CONSTRUCTION PHASE. LANDOWNERS FELT HEAVY PENALTIES SHOULD BE AWARDED AGAINST CONSTRUCTION CREWS WHO DAMAGE AREAS OUTSIDE THE 60-FOOT EASEMENTS, WITHOUT ATTEMPTING TO NEGOTIATE FOR THAT LAND. TO ENSURE THAT THESE

PENALTIES ARE GIVEN, APPROPRIATE INSPECTORS SHOULD BE EMPLOYED TO CONTINUALLY POLICE CONSTRUCTION. ALL LANDOWNERS SHOULD BE GIVEN ADVANCE NOTICE OF THE DAY THAT CONSTRUCTION IS TO COMMENCE SO THAT THEY CAN CHECK PROCEDURES. AS IN THE PREVIOUS SPREAD AREAS, IT WAS FELT THAT THE TRENCH WAS LEFT OPEN TOO LONG, TOPSOIL WAS INADEQUATELY REMOVED, AND CONSTRUCTION OCCURRED DURING BAD WEATHER CONDITIONS WHEN IT SHOULD NOT HAVE.

OVER 47 PERCENT OF THE LANDOWNERS STATED THAT CLEAN-UP AND RESTORATION WERE NOT COMPLETED AT THE TIME OF THIS SURVEY. EXACTLY 50 PERCENT OF THE LANDOWNERS HAD SIGNED THE 'RECEIPT AND RELEASE FOR DAMAGES' FORM. OVER 55 PERCENT OF THE LANDOWNERS WERE NOT SATISFIED WITH THE CLEAN-UP AND RESTORATION PROCESS. ONLY 42 PERCENT OF THE RESPONDENTS KNEW THAT IPL HAD A PROGRAM TO MONITOR THE RECOVERY OF THEIR LAND.

#### RECOMMENDATION:

##### RESTORATION PROCEDURES

LANDOWNERS FELT THAT BETTER RESTORATION TECHNIQUES COULD BE ACCOMPLISHED IF ENVIRONMENTALISTS AND FARMERS CARRIED OUT MORE SITE INSPECTIONS. FARMERS SHOULD BE ORGANIZED AND INFORMED OF THEIR RIGHTS AND THE OBLIGATIONS THAT RESTORATION CREWS MUST MEET. BETTER COMMUNICATION BETWEEN LANDOWNERS AND CONTRACTORS MIGHT PREVENT CERTAIN PROBLEMS. RESPONDENTS NEED GUIDELINES FOR ITEMIZING DAMAGES. FINALLY, THE STANDARDIZATION OF PRICES FOR DAMAGES IS NEEDED, I.E., STANDARD PRICE FOR WORK DONE BY LANDOWNERS.

## SPREAD V - TRENTON TO BROCKVILLE

### GENERAL FINDINGS

IN SPREAD 5, LIKE SPREAD 4, ONLY 16 PERCENT OF THE RESPONDENTS ATTENDED PUBLIC MEETINGS. EXACTLY 40 PERCENT OF THE SAMPLE REPORTED THAT THEY ATTEMPTED TO OBTAIN ADDITIONAL INFORMATION FROM THE PIPELINE COMPANY. THE STRONGEST SOURCE OF INFORMATION WAS PROVIDED BY WORD-OF-MOUTH, FOLLOWED BY PIPELINE COMPANY OFFICIALS, PAST EXPERIENCE WITH PIPELINE COMPANIES, LAWYERS, AND GOVERNMENT AGENTS. THE OFA INVOLVEMENT DID NOT APPEAR AS STRONG IN SPREAD 4, 5 AND 6 AS IT WAS IN SPREAD 1 AND 2. APPROXIMATELY 64 PERCENT OF THE LANDOWNERS RELIED SOLELY ON PIPELINE COMPANY OFFICIALS FOR INFORMATION. ABOUT 64 PERCENT OF THESE LANDOWNERS SAID THAT THEY DID NOT RECEIVE ANY WRITTEN INFORMATION FROM THE PIPELINE OFFICIALS PRIOR TO OR DURING NEGOTIATIONS. A TOTAL OF 38 PERCENT OF THE RESPONDENTS RECEIVE WRITTEN INFORMATION OF SOME SORT.

EIGHTEEN PERCENT OF THE SAMPLE HAD LAND EXPROPRIATED. THE REASONS FOR EXPROPRIATION ARE SIMILAR TO THOSE PRESENTED FOR SPREAD 4:

- MONETARY PAYMENTS DID NOT INCLUDE DEPRECIATION VALUE;
- SEVERAL LANDOWNERS STATED THAT THERE WAS SUCH A DISCREPANCY IN PRICES BEING OFFERED BY THE VARIOUS LAND AGENTS TO THE LOCAL FARMERS THAT THEY DID NOT TRUST LAND AGENTS AND WANTED THE COURTS TO DECIDE;
- DID NOT WANT THE PIPELINE ON THEIR LAND.

APPROXIMATELY 46 PERCENT OF THE RESPONDENTS HAD NOT HEARD OF THE EXPROPRIATION HEARINGS. (SEE PAGE 70, PAR.2)

EXACTLY 48 PERCENT OF THE RESPONDENTS SAID THAT THEY WERE NOT SHOWN A FINAL PLAN OF WHERE THE PIPELINE WOULD RUN THROUGH THEIR PROPERTIES. A TOTAL OF 40 PERCENT OF THE RESPONDENTS STATED THAT ANOTHER PIPELINE COULD NOT BE BUILT IN THE 60 FOOT EASEMENT AND ANOTHER 16 PERCENT DID NOT KNOW WHETHER ANOTHER PIPELINE COULD BE BUILT IN THE EASEMENT. FORTY-EIGHT PERCENT OF THE RESPONDENTS HAD A COMPANY REPRESENTATIVE TAKE NOTE OF AREAS ON THE PROPERTY THAT NEEDED SPECIAL CONSIDERATION.

#### RECOMMENDATIONS:

##### NEGOTIATION PROCEDURES

MANY LANDOWNERS WERE CONFUSED BY CONTRADICTORY INFORMATION GIVEN TO THEM BY VARIOUS NEGOTIATORS. LANDOWNERS RECOMMENDED DEALING WITH ONLY ONE INFORMED AND ACCOUNTABLE LAND AGENT. RESPONDENTS STRONGLY RECOMMENDED STANDARDIZED LAND PRICES THAT WOULD REPRESENT THE MARKET VALUE OF THE LAND.

EXACTLY 64 PERCENT OF THE SAMPLE STATED THAT THEY WERE NOTIFIED WHEN CONSTRUCTION WOULD START. NEARLY 44 PERCENT OF THE RESPONDENTS HAD ADDITIONAL LAND TAKEN DURING THE CONSTRUCTION PROCESS. OF THAT 44 PERCENT, 95 PERCENT SAID THAT THEY WERE NOT INFORMED THAT THESE ADDITIONAL LANDS WERE TAKEN.

RECOMMENDATIONS:

CONSTRUCTION PROCEDURES

IT WAS FELT THAT THE INFORMATION PROCESS NEEDED CERTAIN IMPROVEMENTS: BETTER LIAISON BETWEEN THE CONTRACTOR'S WORK CREWS AND THE FARMER, LETTING THE FARMER KNOW WHO THE APPROPRIATE PERSON WAS TO CONTACT IN CASE OF A PROBLEM, LETTING FARMERS HAVE A COPY OF WHAT INFORMATION THE CONTRACTORS HAD DOCUMENTED ABOUT HIS PROPERTY, AND LETTING A LANDOWNER KNOW WHAT HE LEGALLY MUST DO SO THAT HE CAN MAKE SURE WHEN CHECKING CONSTRUCTION THAT BINDING OBLIGATIONS ARE MET.

CERTAIN CONSTRUCTION PROBLEMS WERE RE-OCCURRING IN THE ENTIRE SPREAD AREA: TRENCH LEFT OPEN TOO LONG, BAD WEATHER CONDITIONS, PROBLEMS WITH SEPARATION OF SUBSOIL AND TOPSOIL, FENCING, AND SOIL COMPACTION. BLASTING PROBLEMS ALSO OCCURRED IN CERTAIN AREAS OF SPREAD 5. MANY LANDOWNERS FELT THAT THE CONTRACTORS SEEMED TO KNOW VERY LITTLE ABOUT BLASTING PROCEDURES. EXACTLY 42 PERCENT OF THE LANDOWNERS EXPERIENCED UNEXPECTED PROBLEMS DURING THE COURSE OF CONSTRUCTION. THE MAIN PROBLEMS IDENTIFIED WERE: LOST LIVESTOCK; BLASTING PROBLEMS; LOST ACCESS TO PARTS OF THE FARM; DRAINAGE PROBLEMS; TREES CUT WITHOUT PERMISSION; AND ADDITIONAL LAND TAKEN WITHOUT PERMISSION.

BY SEPTEMBER 10, 1976, 60 PERCENT OF THE LANDOWNERS STATED THAT CLEAN-UP WAS COMPLETED ON THEIR PROPERTY. HOWEVER, 68 PERCENT HAD NOT YET SIGNED THE 'RECEIPT AND RELEASE FOR DAMAGES' FORM. OVER 73 PERCENT OF THE SAMPLE HAD SIGNED A FORM, TEMPORARILY RELEASING THE CONTRACTORS FROM THE CLEAN-UP

JOB TO DATE. EXACTLY 43 PERCENT WERE SATISFIED WITH THE CLEAN-UP JOB. 46 PERCENT OF THE RESPONDENTS SAID THAT IPL HAD A CONTINUING PROGRAM TO MONITOR THE RECOVERY OF THEIR LAND.

#### RECOMMENDATIONS:

##### RESTORATION PROCEDURES

LANDOWNERS CALLED FOR MONETARY GUIDELINES ON ITEMIZING DAMAGES AND LABOUR. FARMERS ALSO WANTED ACCESSIBLE INSPECTORS THAT POSSESS SOME FARMING KNOWLEDGE. THEY ALSO FELT THAT THEY SHOULD HAVE A LONGER PERIOD OF TIME TO SIGN A FINAL RELEASE FORM, AS MANY DAMAGES DO NOT IMMEDIATELY APPEAR. RESTORATION WAS SAID TO BE DELAYED TOO LONG AFTER FINAL BACKFILLING OPERATIONS HAD BEEN COMPLETED. COMPLAINTS CONCERNING INEFFICIENT ROCK PICKING WERE WIDESPREAD IN THIS AREA.

#### SPREAD VI - BROCKVILLE TO QUEBEC BORDER

##### GENERAL FINDINGS

IN SPREAD 6, 24 PERCENT OF THE RESPONDENTS ATTENDED PUBLIC MEETINGS CONCERNING THE PIPELINE. ANOTHER 38 PERCENT ATTEMPTED TO OBTAIN ADDITIONAL INFORMATION ABOUT THE PIPELINE. ABOUT 41 PERCENT OF THOSE LANDOWNERS MENTIONED DID NOT RECEIVE ANY WRITTEN INFORMATION FROM THE PIPELINE COMPANY OFFICIALS PRIOR TO OR DURING NEGOTIATIONS. A TOTAL OF 33 PERCENT OF THE RESPONDENTS RECEIVED WRITTEN INFORMATION FROM THE PIPELINE COMPANY.

EXACTLY 19 PERCENT OF THE RESPONDENTS HAD LAND EXPROPRIATED AND/OR ATTENDED THE EXPROPRIATION HEARINGS. THE FOLLOWING REASONS FOR PROCEEDING INTO EXPROPRIATION WERE OFFERED:

- NOT ENOUGH MONEY OFFERED FOR THE LAND;
- TO DRAW PUBLIC ATTENTION TO INADEQUACIES OF THE EXPROPRIATION PROCEDURES UNDER THE RAILWAY ACT AND TO ENCOURAGE LEGISLATIVE REFORM;
- TO FORCE THE NEB TO LOOK AT AN ALTERNATIVE ROUTE RATHER THAN THROUGH PRIME AGRICULTURAL LAND.

OVER 40 PERCENT OF RESPONDENTS HAD NOT HEARD OF THE EXPROPRIATION HEARINGS. (SEE P.70 PAR. 2)

ALMOST 48 PERCENT OF THE LANDOWNERS WERE NOT SHOWN A FINAL PLAN OF WHERE THE PIPELINE WOULD RUN THROUGH THEIR PROPERTIES BEFORE THEY SIGNED THE FINAL AGREEMENT.

OVER 54 PERCENT OF THE RESPONDENTS STATED THAT ANOTHER PIPELINE COULD NOT BE BUILT IN THE 60-FOOT EASEMENTS. ANOTHER 17 PERCENT STATED THAT THEY DID NOT KNOW WHETHER OR NOT ANOTHER PIPELINE COULD BE CONSTRUCTED. OF THE 26 PERCENT THAT STATED THAT ANOTHER PIPELINE COULD BE BUILT IN THE EASEMENT, 70 PERCENT OF THESE LANDOWNERS LEARNED THIS INFORMATION FROM LAWYERS, WORD-OF-MOUTH, OR FROM EXPERIENCE WITH OTHER PIPELINE COMPANIES.

ALMOST 48 PERCENT OF THE LANDOWNERS SAMPLED HAD A COMPANY REPRESENTATIVE NOTE AREAS ON THE PROPERTY THAT NEEDED SPECIAL CONSIDERATION.

RECOMMENDATION:

NEGOTIATION PROCEDURES

CONSISTENT WITH WHAT LANDOWNERS FROM OTHER SPREAD AREAS INDICATED, LANDOWNERS IN THIS SPREAD AREA SUGGESTED THAT THE INFORMATION PROCESS REQUIRES GREAT IMPROVEMENTS, ESPECIALLY IN TRAINING OF LAND AGENTS. ALL RIGHTS SHOULD BE THOROUGHLY EXPLAINED TO THE LANDOWNER BY LAND AGENTS. LANDOWNERS WANTED ONLY ONE NEGOTIATOR TO DEAL WITH DURING THE PIPELINE CONSTRUCTION. LANDOWNERS AGAIN SUGGESTED THE STANDARDIZATION OF A LAND PRICING SYSTEM. EQUAL PRICES SHOULD BE GIVEN FOR ALL LAND OF THE SAME VALUE. SEVERAL LANDOWNERS WANTED THE LAND VALUES RECEIVED TO BE PUBLIC INFORMATION. LANDOWNERS FELT THAT POTENTIAL REAL ESTATE VALUE WAS NOT CONSIDERED IN AWARDING MONIES. THEY FELT THAT AN INDEPENDENT BODY SHOULD BE PRESENT DURING ALL NEGOTIATIONS.

IMPROVEMENTS IN WHAT WAS CONSIDERED TO BE AN INEFFICIENT EXPROPRIATION SYSTEM WERE RECOMMENDED.

ALMOST 67 PERCENT OF THE SAMPLE LANDOWNERS WERE NOTIFIED WHEN CONSTRUCTION WOULD START ON THEIR PROPERTIES. OVER 40 PERCENT OF THE RESPONDENTS STATED THAT THE AGREED UPON RIGHT-OF-WAY CHANGED COURSE DURING THE PIPELINE CONSTRUCTION. ONLY 21 PERCENT OF THESE LANDOWNERS WERE NOTIFIED OF THESE CHANGES DURING CONSTRUCTION.

OVER 52 PERCENT OF THE LANDOWNERS EXPERIENCED UNEXPECTED PROBLEMS ON THEIR PROPERTIES DURING CONSTRUCTION. THE MAIN PROBLEMS WERE: TOPSOIL AND SUBSOIL MIXING; LOST LIVESTOCK;



TILE DRAIN PROBLEMS; TRENCH LEFT OPEN TOO LONG; UNNECESSARY TREE CUTTING; LOST ACCESS TO PARTS OF FARM; SOIL COMPACTION; LANE-WAY DAMAGE AND BLASTING PROBLEMS.

RECOMMENDATIONS:

CONSTRUCTION PROCEDURES

LANDOWNERS HEAVILY CRITICIZED THE CONSTRUCTION CREW IN THIS SPREAD AREA AND CALLED FOR A MORE ORGANIZED WORKER/BOSS SYSTEM. BOSSES SHOULD CONTINUALLY CHECK CREWS. IT WAS SUGGESTED THAT BETTER METHODS SHOULD BE FOUND FOR ENSURING THAT CONTRACT COMMITMENTS ARE MET. AGRICULTURAL EXPERTS SHOULD BE AVAILABLE TO ADVISE ON CONSTRUCTION PROCEDURES. TOPSOIL AND SUBSOIL MIXING PROBLEMS AND EXTREMELY BAD WEATHER CONDITIONS COMBINED TO CAUSE THE MAJOR COMPLAINTS. RECOMMENDATIONS CALLED FOR MORE TIME TO COMPLETE THE PIPELINE IN BAD WEATHER AND BETTER GUIDELINES FOR CREWS WORKING IN AGRICULTURAL AREAS.

ONLY 24 PERCENT OF THE LANDOWNERS STATED THAT RESTORATION AND CLEAN-UP WERE COMPLETED ON THEIR PROPERTY. SLIGHTLY OVER 21 PERCENT OF THE SAMPLE HAD SIGNED THE 'RECEIPT AND RELEASE FOR DAMAGES' FORM. SIMILARLY, ONLY 24 PERCENT OF THE LANDOWNERS WERE SATISFIED WITH THE RESTORATION PROCESS TO DATE.

ALMOST 36 PERCENT OF THE LANDOWNERS STATED THAT IPL HAD A CONTINUING PROGRAM TO MONITOR THE RECOVERY OF THEIR LAND.

RECOMMENDATIONS:

RESTORATION PROCEDURES

THREE IMPROVEMENTS IN RESTORATION TECHNIQUES WERE SUGGESTED BY LANDOWNERS. STONE PICKING AND TOPSOIL PLACEMENT APPEAR TO BE THE TWO MOST COMMON PROBLEMS. A GENERAL CALL WAS MADE FOR MORE CARE AND EFFICIENCY IN RESTORATION TECHNIQUES.

LANDOWNERS FELT THAT RESTORATION WAS NOT COMPLETED IN ACCORDANCE WITH THE STANDARDS REQUIRED BY THE ORIGINAL AGREEMENTS. THEY FELT THAT IMPROVEMENTS IN THE ADMINISTRATION PROCESS WOULD HELP. THESE SUGGESTIONS FOR IMPROVEMENT CALLED FOR: BETTER INSPECTION, FASTER RESTORATION TIME AND EASIER LANDOWNER ACCESS TO RESTORATION CREWS.

2.2.2. B) PUBLIC LANDOWNER

GENERAL FINDINGS

FOR THE MOST PART, THE LAND ACQUIRED FROM THESE LANDOWNERS WAS FOR ROAD ALLOWANCES. UNLIKE THE PRIVATE LANDOWNERS, THE VARIOUS PUBLIC BODIES APPEARED TO BE MORE SATISFIED WITH ALL PHASES OF THE PIPELINE CONSTRUCTION. THEY ARE SUPPORTED BY THEIR OWN LEGAL STAFF AND INSPECTORS, AND HAVE HAD EXPERIENCE WITH MANY TYPES OF LINES UNDER THEIR ROAD ALLOWANCES. IT IS ALSO IMPORTANT TO NOTE THAT THESE GROUPS MAY BE BETTER EQUIPPED TO ENSURE THAT THEIR RIGHTS ARE UPHELD.

IN TWO INSTANCES, THE LEGAL AGREEMENTS PRESENTED BY IPL WERE UNACCEPTABLE TO THE AGENCIES. IPL AGREED TO CHANGE THESE AGREEMENTS. THE CENTRAL LAKE ONTARIO CONSERVATION AUTHORITY, FOR EXAMPLE, WOULD NOT CONSENT TO SIGN ANY AGREEMENTS UNTIL ALL THE WORK WAS COMPLETED. THEY FELT THAT THIS WAY THEY WOULD BE GUARANTEED THAT THE LAND WOULD BE RETURNED TO ITS ORIGINAL STATE. THIS AUTHORITY FELT THAT THE ENVIRONMENTAL GUIDELINES WERE TOO GENERAL AND THAT THE COMPANY INSPECTORS WERE NOT ADEQUATELY TRAINED OR EXPERIENCED TO ENSURE THAT ALL COMMITMENTS WOULD BE MET.

ALLOTING ROAD ALLOWANCES FOR VARIOUS LINES IS A COMMON PROCEDURE FOR MOST OF THESE AGENCIES. SO MUCH SO, THAT THEY DID NOT HOLD THE CONTRACTORS TO A PERFORMANCE BOND, WHICH IS OFTEN THEIR STANDARD PRACTICE. DESPITE A FEW MINOR PROBLEMS, THE MAJORITY OF THESE LANDOWNERS WERE SATISFIED WITH THE FINAL RESTORATION PROCESS. HOWEVER, A FEW GENERAL RECOMMENDATIONS WERE MADE:

- A) THE CONTRACTORS AND IPL ARE RELUCTANT TO CHANGE PLANS AFTER ORIGINAL DESIGNS SO THE NEGOTIATION STAGE IS CRITICAL;
- B) ALL COMMITMENTS SHOULD BE ANALYZED DURING THE FIRST CONTACT WITH COMPANY OFFICIALS AS LATER CHANGES ARE UNLIKELY.

ONTARIO HYDRO OWNS THE ROW FROM BURLINGTON TO PICKERING, WHICH INCLUDED ALMOST ALL OF THE SPREAD 3 AREA FROM MISSISSAUGA TO PICKERING. NEGOTIATIONS BEGAN IN JANUARY OF 1974 AND OVER 75 MEETINGS BETWEEN IPL, BECHTEL AND ONTARIO HYDRO PERSONNEL WERE HELD PRIOR TO, DURING AND AFTER CONSTRUCTION. THERE IS NO QUESTION THAT ONTARIO HYDRO WAS REASONABLY WELL INFORMED. BUT EVEN WITH INFORMATION AND TECHNICAL EXPERTS AVAILABLE CERTAIN PROBLEMS THAT WERE SIMILAR TO THOSE EXPERIENCED BY PRIVATE LANDOWNERS OCCURRED. ONTARIO HYDRO PERSONNEL MADE RECOMMENDATIONS TO US WHICH REFLECT THOSE DIFFICULTIES THAT WERE EXPERIENCED.

RECOMMENDATIONS:

NEGOTIATION PROCESS

- A) HYDRO TO MAKE AVAILABLE FOR ISSUE TO ANY PIPELINE COMPANY CONTEMPLATING USE OF THEIR RIGHTS-OF-WAY, A GENERAL SPECIFICATION COVERING ONTARIO HYDRO COMMERCIAL AND TECHNICAL REQUIREMENTS, INCLUDING REFERENCE TO THE ENVIRONMENTAL ASSESSMENT ACT, 1975 AND ITS REGULATIONS.
- B) DEVELOPMENT OF ENVIRONMENTAL GUIDELINES BY THE PROVINCIAL MINISTRY OF THE ENVIRONMENT AND ENVIRONMENT CANADA IN CONJUNCTION WITH OTHER ONTARIO MINISTRIES AND NATIONAL AND PROVINCIAL ENERGY BOARDS, FOR THE PLANNING, ROUTE

LOCATION, AND DESIGN, CONSTRUCTION AND RESTORATION OF ANY PIPELINE FACILITY.

- c) DEVELOPMENT OF A PROCEDURE TO ENFORCE ENVIRONMENTAL PROTECTION MEASURES BY THE PROVINCIAL MINISTRY OF THE ENVIRONMENT AND ENVIRONMENT CANADA OR THE NATIONAL AND ONTARIO ENERGY BOARDS TO ENSURE PROMPT IMPLEMENTATION OF ENVIRONMENTAL PROTECTION ON SHORT NOTICE WHEN REQUIRED.

RECOMMENDATIONS:

CONSTRUCTION AND RESTORATION PROCEDURES

HYDRO UTILIZED THEIR OWN INSPECTORS TO CHECK CONSTRUCTION AND RESTORATION PROCEDURES. THE MAIN PROBLEMS AS IDENTIFIED BY THESE INSPECTORS WERE:

- A) DIRT PILED OFF THE ROW AGAINST WOODED AREAS;
- B) UNNECESSARY DAMAGE TO TREES;
- C) NO PAINTING OF DAMAGED TREES BY CONTRACTORS UNLESS FORCED TO DO SO;
- D) STREAM BANK EROSION.

RECOMMENDATION FOR IMPROVING FUTURE CONSTRUCTION PROCEDURES ARE AS FOLLOWS:

- A) BETTER CONTROL OF CONTRACTORS BY ENVIRONMENTAL MANAGERS AND PROPONENT.
- B) MORE QUALIFIED AND EXPERIENCED COMPANY INSPECTORS.

- C) EDUCATE CONSTRUCTION WORKERS ABOUT SOUND ENVIRONMENTAL PRACTICES.
- D) HAVE THE SAME FOREMAN FOR CONSTRUCTION AND CLEAN-UP PROCEDURES TO SAFEGUARD AGAINST UNNECESSARY DAMAGES.
- E) REQUIRE THAT EXPERIENCED INSPECTORS ARE AVAILABLE AND COMMIT CONTRACTORS TO A PERFORMANCE BOND TO ENSURE THAT ALL COMMITMENTS ARE MET.
- F) PROVIDE A SEPARATE ENVIRONMENTAL BUDGET SO CERTAIN CONCERNS DO NOT HAVE TO BE SACRIFICED FOR OTHER ECONOMIC CONCERNS.
- G) EXTEND THE TIME OF THE MONITORING PROGRAM TO ALLOW EVIDENCE OF ALL POSSIBLE CHANGES.

### 2.2.3 SUMMARY AND COMMENT

THIS SECTION PRESENTS A SUMMARY AND SOME COMMENTS ON THE STUDY FINDINGS FROM ALL THE SPREAD AREAS. IN ADDITION TO PROVIDING THE SUMMARY OF THE FINDINGS A FEW COMPARISONS HAVE BEEN MADE THROUGHOUT, BETWEEN WHAT THE LANDOWNERS TOLD US AND THE CONCERNS BROUGHT FORWARD BY THE PROVINCE AT THE NEB HEARINGS. FOR A MORE COMPLETE COMPARISON IT IS HIGHLY RECOMMENDED THAT THE READER EXAMINE THE NEB HEARING TRANSCRIPTS FOR REFERENCES TO THE VARIOUS COMMITMENTS AND STATEMENTS MADE BY IPL WHILE UNDER CROSS-EXAMINATION BY THE ONTARIO MINISTRY OF ENERGY'S COUNSEL.

ACCORDING TO INFORMATION OBTAINED BY THIS MINISTRY MOST LANDOWNERS FIRST BECAME AWARE OF IPL'S INTENTION TO BUILD THE LINE WHEN THE PIPELINE OFFICIALS FIRST CONTACTED THEM. CONTACT WAS MADE EITHER BEFORE THE CERTIFICATE HEARINGS

FOR SIGNING OF THE OPTION AGREEMENTS OR AFTER THE HEARING FOR THE SIGNING OF EASEMENT AGREEMENTS. MOST OF THE LANDOWNERS HAD NOT HEARD ABOUT THE NEB HEARINGS HELD IN OTTAWA TO DISCUSS IPL'S APPLICATION FOR A 'CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY'. THERE IS A PROVISION IN THE NATIONAL ENERGY BOARD ACT FOR THE HOLDING OF PUBLIC HEARINGS AS PART OF THE BOARD'S DELIBERATIONS AS TO WHETHER OR NOT IT SHOULD ISSUE THE CERTIFICATE. THE STATUTE DOES NOT SET OUT NOTIFICATION PROCEDURES TO BE FOLLOWED FOR PUBLIC ANNOUNCEMENT OF THE HEARING.

THE BOARD DID MAKE ORDERS AND PROVIDE SOME INCENTIVE FOR THE APPLICANT TO CONSIDER VARIOUS ITEMS CONCERNING LANDOWNERS THAT THE PROVINCE DREW TO THEIR ATTENTION DURING THE HEARINGS.

AS WAS MENTIONED, ONLY ONE LANDOWNER ATTENDED THE HEARINGS IN OTTAWA. AMONG OTHER POINTS, THIS INDIVIDUAL BROUGHT TO THE ATTENTION OF THE BOARD THE FACT THAT IPL HAD NO SOILS OR AGRICULTURAL EXPERTS ON PERMANENT STAFF DURING PAST PIPELINE CONSTRUCTION. THIS SORT OF INFORMATION EXCHANGE AT HEARINGS CAN BE ESPECIALLY VALUABLE TO ALL PARTICIPANTS. BUT, TO BE EFFECTIVE, HEARINGS SHOULD BE WELL ADVERTISED, HELD AT CONVENIENT LOCATIONS, AND ORGANIZED IN A FASHION WHICH PROMOTES THIS SORT OF POSITIVE PARTICIPATION AND EXCHANGE OF INFORMATION.

THAT THE BOARD SHOULD BE RELATIVELY SILENT AT THAT TIME ON BROADER ENVIRONMENTAL AND SOCIAL IMPACT ISSUES WAS NOT

SUPRISING. THE NATIONAL ENERGY BOARD ACT WAS IN PLACE BEFORE ENVIRONMENTAL QUALITY AND RELATED ISSUES, SUCH AS THE RIGHT OF AFFECTED LANDOWNERS TO BE MORE INVOLVED IN THE DECISION MAKING PROCESS BECAME SIGNIFICANT PUBLIC ISSUES. WHAT WAS SURPRISING THOUGH WAS THE APPARENT LACK OF NEB AWARENESS TO THE PROBLEMS. ONE EXAMPLE OF THIS WAS THE LACK OF NEB ENVIRONMENTAL INSPECTION TO SEE THAT THE ORDERS MADE WERE BEING CARRIED OUT WITH DILIGENCE AND INTEGRITY BY THE APPLICANT.

TABLES 1 THROUGH 5, INCLUDED IN APPENDIX E, SUMMARIZE SOME OF THE FINDINGS OF THE INDIVIDUAL SPREAD ANALYSES. ALMOST 70 PERCENT OF THE LANDOWNERS DID NOT ATTEND ANY PUBLIC MEETINGS (SEE TABLE 1, APPENDIX E). ALMOST ALL OF THE MEETINGS THAT WERE HELD WERE ORGANIZED BY THE ONTARIO FEDERATION OF AGRICULTURE (OFA). LANDOWNERS WERE ENCOURAGED BY OFA SPOKEMEN TO NEGOTIATE WITH IPL. THEY WERE ALSO PROVIDED WITH INFORMATION ON HOW TO BEST OBTAIN AN APPROPRIATE MONETARY EASEMENT AGREEMENT, AND GENERAL INFORMATION ON PIPELINE CONSTRUCTION PROCEDURES. OTHER MEETINGS WERE ORGANIZED BY LOCAL FARMERS.

BUT EVEN AFTER EFFORTS BY THE OFA, LANDOWNERS DID NOT SEEM TO BE AWARE OF AVAILABLE SOURCES OF INFORMATION. THERE WAS A MAJOR CONCERN EXPRESSED BY THE PROVINCE THAT THIS SORT OF PROBLEM NOT OCCUR AND CONSIDERABLE TIME AND QUESTIONING OF INTERPROVINCIAL PIPELINE REPRESENTATIVES WAS UNDERTAKEN AT THE NEB HEARINGS SO THAT THE APPLICANT AND THE BOARD WOULD APPRECIATE THE PROBLEMS AND COMMITMENTS WOULD BE MADE.



THE STUDIES ILLUSTRATED THAT THE LANDOWNERS WERE POORLY INFORMED YET THE INTERVIEW FINDINGS SHOWED THAT ONLY 32 PERCENT OF THE LANDOWNERS ATTEMPTED TO OBTAIN ADDITIONAL INFORMATION ABOUT THE PIPELINE. ONE LANDOWNER PRESENTED HIS VIEWS ON THIS SUBJECT DURING HIS INTERVIEW:

"I'M A RETIRED BUSINESSMAN AND I CAN RELATE TO THE PIPELINE COMPANIES. IF FARMERS DON'T TAKE THE TIME TO GET INFORMED, IT'S THEIR OWN FAULT. THE BUILDING OF A PIPELINE IS A TREMENDOUSLY HUGE OPERATION. THEY HAVEN'T THE TIME TO LISTEN TO EVERY SILLY COMPLAINT FROM FARMERS WHO END UP WANTING MORE MONEY SIMPLY BECAUSE THEY HEARD SOMEONE ELSE GOT MORE THAN THEY DID. IF THE MONEY ACCEPTED WAS OKAY IN THE FIRST PLACE, IT SHOULD STILL BE OKAY."

IN PART THIS STATEMENT MAY BE TRUE, BUT ANOTHER EXPLANATION MAY ALSO ACCOUNT FOR THE LANDOWNERS APPARENT LACK OF EFFORT TO FIND ADDITIONAL INFORMATION. LANDOWNERS FELT A TREMENDOUS SENSE OF FRUSTRATION THAT MAY HAVE STEMMED FROM INADEQUATE INVOLVEMENT AND INFORMATION DURING THE EARLY PLANNING STAGES OF THE PROJECT. ANOTHER LANDOWNER'S COMMENTS PROVIDED DURING HIS INTERVIEW ILLUSTRATE THIS FEELING:

"HAVING A PIPELINE GO THROUGH YOUR FARM IS INDEED A FRUSTRATING EXPERIENCE. UNFORTUNATELY, YOU DO NOT RECEIVE ANY MEANINGFUL HELP FROM ANY SOURCE. BOTH PROVINCIAL AND FEDERAL GOVERNMENTS PAY LIP SERVICE TO FINDINGS OF ANY INQUIRY. I AM CERTAIN NOW, MORE THAN EVER, THAT NO ACCUMULATION OF EVIDENCE HARMFUL TO FARMLANDS AND THE ENVIRONMENT WOULD HAVE STOPPED OR DIVERTED THE CONSTRUCTION OF THIS PIPELINE. IT IS SIMPLY THAT BOTH THE DEPARTMENT OF AGRICULTURE AND ENVIRONMENT HAVE LITTLE REAL POWER IN CABINET. IT IS THEREFORE A VERY LONELY AND SCARY EXPERIENCE TO BE TAKING ON THE LEADERS OF OUR COUNTRY AT OUR OWN EXPENSE. HOWEVER, THE VAST AMOUNT OF EVIDENCE THROUGH PHOTOGRAPHS, CORRESPONDENCE, AND CAREFUL OBSERVATION THAT I AND MY FRIEND HAVE ACCUMULATED MAKES ME EVEN MORE CONFIDENT THAT MY STAND ON THIS ISSUE WAS A CORRECT ONE."

IN THIS STUDY, STAFF RESEARCHERS WANTED TO GAIN A GENERAL IMPRESSION OF THE LANDOWNER 'SATISFACTION' WITH THE CONSTRUCTION. BECAUSE IT WAS RECOGNIZED THAT THE TERM WAS DIFFICULT TO DEFINE AND IT'S MEANING FELT TO BE VAGUE WE WERE HESITANT ABOUT PRESENTING THE FINDINGS. WE DECIDED THAT THERE WAS AN IMPORTANT MESSAGE TO BE CONVEYED BY THIS INFORMATION, THEREFORE, IT WAS DECIDED TO INCLUDE SOME OF THE FINDINGS AS A GENERAL INDICATION OF THE LANDOWNERS' FEELINGS.

SOME OF THESE LANDOWNERS FROM SPREADS 1, 2 AND 3 HAD AT LEAST THREE PREVIOUS PIPELINES CONSTRUCTED ON THEIR PROPERTIES TWO OF THREE WERE IPL LINES AND ONE WAS SUN OIL COMPANY LTD. LINE. IN SPREADS 4 TO 6, MOST LANDOWNERS HAD EITHER A TRANSNORTHERN OR TRANSCANADA PIPELINE ON THEIR PROPERTY. BEING SATISFIED OR UNSATISFIED WITH PAST PIPELINE CONSTRUCTION DID NOT APPEAR TO AFFECT WHETHER A LANDOWNER WAS SATISFIED OR DISSATISFIED WITH THE 1975 IPL LINE. LANDOWNERS GENERALLY PINNED SUCCESS OR FAILURE OF CONSTRUCTION ON THE PARTICULAR CONSTRUCTION CREW OPERATING IN THEIR AREA. LANDOWNERS STATED THAT EXPERIENCE WAS THE BEST TEACHER AND PAST PROBLEMS HAD MADE THEM MORE AWARE OF WHAT TO EXPECT WITH THIS IPL LINE.

FIFTY-FIVE PERCENT OF THE LANDOWNERS STATED THAT THEY WERE NOT SATISFIED WITH THE RESTORATION PROCESS. OVER 43 PERCENT DID NOT KNOW THAT IPL HAD A PROGRAM TO MONITOR THE RECOVERY OF THEIR LAND, EVEN THOUGH IPL CLAIMS TO HAVE SENT A LETTER DISCUSSING THE SOIL RESTORATION PROGRAM. SINCE THE MAJOR PROBLEM WAS MIXING OF TOPSOIL AND SUBSOIL, MOST LANDOWNERS NATURALLY REMAINED DISSATISFIED WITH THIS ASPECT ONCE "RESORTATION" WAS COMPLETED.

JUST UNDER 45 PERCENT OF THE LANDOWNERS SIGNED THE 'RECEIPT AND RELEASE FOR DAMAGES' FORM. IN MANY CASES, LAND AGENTS HAD NOT APPROACHED THE FARMERS TO SIGN THE FINAL DAMAGE FORM AT THE TIME OF THE SURVEY. MANY LANDOWNERS HAD PERSONALLY CONTRACTED TO COMPLETE THE CLEANUP PROCESS, BUT MOST OF THESE LANDOWNERS WERE NOT SURE OF WHAT TO DO. SEVERAL LANDOWNERS WERE AWARDED A 'LUMP SUM' PAYMENT TO DO THE CLEANUP, OTHERS HAD BEEN TOLD THAT A LAND AGENT WOULD AWARD THEM MONIES ONCE THE JOB WAS COMPLETED. MANY OF THESE LANDOWNERS WISHED THAT THEY HAD NOT AGREED TO DO THE WORK BECAUSE IT OFTEN ENDED UP TAKING THEM MORE TIME THAN ORIGINALLY ANTICIPATED, ESPECIALLY IN THE ROCKY AREAS OF SPREAD 5 AND PARTS OF SPREAD 6

SOME RESPONDENTS WERE SATISFIED WITH THE WORK OF THE CONSTRUCTION CREW YET NOT SATISFIED WITH THE CLEAN-UP CREW. GENERALLY, MOST LANDOWNERS WERE NOT SATISFIED WITH THE AMOUNT OF INFORMATION THAT THEY RECEIVED ABOUT THE PIPELINE.

IT SHOULD ALSO BE NOTED THAT LANDOWNERS WHO HAD ONLY A SMALL SEGMENT OF THEIR PROPERTY CROSSED BY THE PIPELINE OR PERHAPS CROSSED IN A STRAIGHT LINE NEAR THE BACK END OF THE PROPERTY, OR ON UNUSED LAND, WERE NOT AS DISSATISFIED AS LANDOWNERS WHO HAD THE PIPELINE CROSS THROUGH A LARGER PERCENTAGE OF THE THEIR PROPERTY ESPECIALLY WHERE THE PIPELINE CROSSED THROUGH THE MIDDLE OF THE PROPERTY. GENERALLY SPEAKING, IT WAS FOUND THAT THOSE LANDOWNERS WHO HAD TILE BEDS ON THEIR PROPERTY WERE MORE DISSATISFIED WITH CONSTRUCTION AND RESTORATION THAN THOSE WHO DID NOT.

## LEGAL AGREEMENTS AND EXPROPRIATION

A TOTAL OF 11.3 PERCENT (51) OF THE RESPONDENTS HAD LAND EXPROPRIATED BY IPL, EITHER FOR TEMPORARY OR PERMANENT WORKING ROW'S. PAST EXPERIENCE, ADVICE FROM LAWYERS, OR A UNIFIED GROUP OF LOCAL FARMERS, APPEARED TO BE THE PRINCIPAL SOURCES OF MOTIVATION FOR LANDOWNERS WHO CHOSE EXPROPRIATION AS A MEANS TO SETTLE CLAIMS.

THE DECISIONS RENDERED BY THE BOARD IN THE CERTIFICATE HEARINGS ARE PERTINENT ONLY TO THE ISSUE OF WHETHER THE LANDS WERE REQUIRED FOR THE EFFICIENT CONSTRUCTION OF THE LINE. SEVERAL LANDOWNERS FELT THAT THE NEED FOR THE EXPROPRIATION HEARINGS ILLUSTRATES THE INABILITY OF THE PRESENT PLANNING AND MANAGEMENT SYSTEMS TO INCLUDE MECHANISMS FOR SOLVING DISAGREEMENTS BETWEEN IPL AND THOSE FARMERS AFFECTED BY PREVIOUS LINES.

RESPONDENTS WHO ATTENDED COMPENSATION COURTS COMPLAINED THAT THE LEGAL BOUNDARIES OF DAMAGE AND COMPENSATION WERE TOO NARROW. THE LANDOWNER, WHO IS OFTEN INEXPERIENCED IN SUCH MATTERS AND HAS LIMITED FINANCIAL RESOURCES, FACED A CORPORATE ADVERSARY WITH THE RESOURCES AND THE CAPABILITY TO DRAG THE DISPUTE OUT THROUGH VARIOUS LEGAL APPEALS. LANDOWNERS FELT THEY HAD NO SUBSTANTIAL LEVER TO EXERT PRESSURE ON THE PIPELINE COMPANY SO THAT THEIR VIEWS WOULD BE RECOGNIZED. THIS POINT TIES IN AND SUPPORTS VERY CLOSELY OUR EARLIER REFERENCE TO THE FRUSTRATION THAT LANDOWNERS APPARENTLY

EXPERIENCED. IT MAY BE INTERESTING TO NOTE THAT THE LAW REFORM COMMISSION HAS EXAMINED THIS SPECIFIC EXPROPRIATION SYSTEM AND FOUND IT LACKING IN SEVERAL RESPECTS. (LAW REFORM COMMISSION, 1976)

ALMOST 53 PERCENT OF THE RESPONDENTS REPORTED THAT THEY DID NOT SEE A FINAL PLAN OF WHERE THE PIPELINE WOULD RUN THROUGH THEIR PROPERTY BEFORE THEY SIGNED FINAL AGREEMENTS. HOWEVER, MOST LANDOWNERS IN SPREADS 1 TO 3 KNEW THAT THE LINE WOULD LIE IN CLOSE PROXIMITY TO THE PREVIOUS IPL LINE(S). IN OTHER AREAS LANDOWNERS CLAIMED THAT THE ALIGNMENT CHANGED DURING CONSTRUCTION AND SOME WERE NOT INFORMED OF THESE CHANGES. FINALLY, IN SOME AREAS, ADDITIONAL EASEMENT WAS REPORTEDLY TAKEN, OFTEN WITHOUT THE KNOWLEDGE OR CONSENT OF THE LANDOWNERS.

ALMOST 65 PERCENT OF THE LANDOWNERS EITHER DID NOT KNOW, OR FELT CERTAIN THAT THE LEGAL AGREEMENTS THEY SIGNED WITH IPL DID NOT ALLOW CONSTRUCTION OF ANOTHER PIPELINE THROUGH THE 60-FOOT EASEMENT (SEE TABLE 2, APPENDIX D). THIS QUESTION WAS A CRUCIAL ONE, ESPECIALLY IN THE NEW EASEMENT AREAS OF SPREADS 4 TO 6. AS WAS CLEARLY POINTED OUT DURING THE HEARING BY ONTARIO'S COUNSEL, IPL CAN IN FACT BUILD ADDITIONAL LINES IN THE 60-FOOT EASEMENT AND DID SO IN SPREADS 1 TO 3.

#### CONSTRUCTION PROBLEMS

A NUMBER OF CONSTRUCTION PROBLEMS OCCURRED WHICH WERE IDENTIFIED (AS NOTED PREVIOUSLY) DURING THIS STAGE OF THE INVESTIGATION.

ONE POSSIBLE EXPLANATION AS TO WHY CERTAIN CONSTRUCTION PROBLEMS OCCURRED IS THE FACT THAT OVER 42 PERCENT OF THE RESPONDENTS DID NOT HAVE A COMPANY OFFICIAL TAKE NOTE OF THOSE AREAS THAT NEEDED SPECIAL CONSIDERATION, THUS LEAVING THE CONTRACTORS WITHOUT SUCH NECESSARY INFORMATION (SEE TABLE 3, APPENDIX D). THE ERROR COULD LIE EITHER WITH THE LANDOWNERS OR THE COMPANY FOR FAILING TO INFORM THE LANDOWNER OF THE NEED FOR THIS INFORMATION.

OVER 66 PERCENT OF THE LANDOWNERS WERE NOTIFIED WHEN CONSTRUCTION WOULD START. UNFORTUNATELY, SEVERAL LANDOWNERS APPARENTLY KNEW NOTHING ABOUT THE CONSTRUCTION UNTIL CONSTRUCTION CREWS WERE ON THEIR PROPERTIES (SEE TABLE 3, APPENDIX D). MANY FARMING OPERATIONS MAY NOT BE ABLE TO ADAPT QUICKLY TO THE INTERFERENCES CAUSED BY PIPELINE CONSTRUCTION.

A TOTAL OF 56 PERCENT OF THE RESPONDENTS STATED THAT THEY EXPERIENCED UNEXPECTED PROBLEMS DURING THE COURSE OF CONSTRUCTION. THE FOLLOWING IS A LIST OF ONLY THE MAJOR PROBLEMS EXPERIENCED BY LANDOWNERS.

#### PROBLEMS

- A) MIXING OF TOPSOIL AND SUBSOIL AND/OR INADEQUATE TOPSOIL REPLACEMENT;
- B) TILE DRAIN PROBLEMS: PLUGGING, BREAKAGE, NO CAPPING OR TEMPORARY CONNECTING;
- C) ADDITIONAL LAND TAKEN WITHOUT PERMISSION;

- D) TRENCH PROBLEMS: CAVING-IN, FILLING WITH WATER, EROSION, LEFT OPEN TOO LONG, DISRUPTION OF ACCESS TO PROPERTY;
- E) FENCING PROBLEMS: NO TEMPORARY FENCING, BREAKAGE OF EXISTING FENCING, POOR POST ANCHORAGE;
- F) LIVESTOCK TEMPORARLY AND PERMANENTLY LOST;
- G) TREES: CUTTING AND DAMAGING TREES OFF THE ROW;
- H) CONTOURING: POOR CONTOURING AND/OR COMPACTION, CREATING FLOODING AND MUDDY CONDITIONS;
- I) STONES: DEEPLY BURIED STONES DUG UP AND NOT REMOVED;
- J) BLASTING PROBLEMS (I.E., DUST, DEBRIS, ETC.).

IN MANY CASES THESE PROBLEMS WERE SHOWN TO THE MINISTRY RESEARCH STAFF BY THE RESPONDENT. A PHOTOGRAPHIC RECORD OF THE PHYSICAL EFFECTS OF PIPELINE CONSTRUCTION BEFORE, DURING AND AFTER WAS MADE BY THE MINISTRY PIPELINE MONITORING STAFF. THIS RECORD DEPICTS EXAMPLES OF BOTH ADEQUATE AND INADEQUATE CONSTRUCTION RESTORATION TECHNIQUES.

A TOTAL OF 47 PERCENT OF THE LANDOWNERS STATED THAT CLEAN-UP WAS NOT YET COMPLETED. USUALLY, ONE OR TWO ITEMS WERE LEFT TO BE FINISHED, WITH THE EXCEPTION OF SPREAD 6 WHERE THE ENTIRE CLEAN-UP WAS BEHIND SCHEDULE. IN SEVERAL CASES, LANDOWNERS HAD TO RECALL CLEAN-UP CREWS TO REDO THE JOB.

## LANDOWNER RECOMMENDATIONS

THE FOLLOWING SUMMARY REPRESENTS ONLY THE MOST COMMON AND CONSISTENT RECOMMENDATIONS MADE BY LANDOWNERS.

THE RECOMMENDATIONS REFLECT THE WEAKNESSES OF THE PIPELINE PROGRAM AS SEEN BY THE LANDOWNERS.

### RECOMMENDATIONS:

#### NEGOTIATION PROCEDURES

SUGGESTIONS FOR IMPROVING NEGOTIATIONS FOCUSED ON THREE MAJOR AREAS: THE INFORMATION PROCESS, THE RENUMERATION PROCESS, AND THE EXPROPRIATION PROCESS. THE EXPROPRIATION PROCESS HAS ALREADY BEEN DISCUSSED.

RECOMMENDATIONS FOR AN IMPROVED INFORMATION PROCESS FELL INTO TWO MAIN AREAS:

- A) ALL AVAILABLE INFORMATION SHOULD BE MADE AVAILABLE TO AFFECTED LANDOWNERS THROUGH SOME MEANS, I.E.,
  - I) ORGANIZED PUBLIC MEETINGS HELD PRIOR TO, DURING AND AFTER THE PIPELINE CONSTRUCTION;
  - II) MEETINGS WHERE COMPANY FORMS, PROCEDURES, AND COMMITMENTS ARE EXPLAINED IN LAYMAN'S TERMS BY IPL OFFICIALS;
  - III) LANDOWNERS RIGHTS COULD BE EXPLAINED PERHAPS BY GOVERNMENT REPRESENTATIVES.



- B) ONE LAND AGENT SHOULD BE RESPONSIBLE FOR SUPPLYING A LANDOWNER WITH ACCURATE AND RELIABLE INFORMATION NECESSARY FOR A CLEAR UNDERSTANDING OF ALL ASPECTS OF NEGOTIATIONS.

RECOMMENDATIONS FOR IMPROVING THE RENUMERATION PROCESS INCLUDE:

- A) A BETTER DEFINED AND CLEARLY PRESENTED LAND CLASSIFICATION SYSTEM FOR AWARDING MONIES BASED ON SUCH VARYING CONDITIONS AS:

- I) ACTUAL AND POTENTIAL LAND VALUE;
- II) ROAD FRONTAGE;
- III) WHERE THE PIPELINE CROSSES THE FARM AND WHAT DISRUPTION IT CAUSES;
- IV) THE AMOUNT OF LAND UTILIZED BY THE PIPELINE;

- B) STANDARDIZED PAYMENTS. EQUAL LAND CLASSIFICATION; EQUAL PAYMENT.

ALTHOUGH THERE WERE NO QUESTIONS IN THE SURVEY DIRECTLY CONCERNING MONETARY AGREEMENTS A LARGE NUMBER OF LANDOWNERS VOLUNTEERED INFORMATION ON THE SUBJECT. MONETARY AGREEMENTS WERE NOT STUDIED IN DETAIL. HOWEVER, ON THE BASIS OF STATEMENTS OFFERED BY THE LANDOWNERS THERE WERE CASES WHERE THEY FELT DISCREPANCIES IN MONIES AWARDED BETWEEN PROPERTIES DID NOT APPEAR TO BE JUSTIFIED. THE MINISTRY AT THIS TIME DOES NOT HAVE DATA TO EITHER SUPPORT OR DENY THESE CLAIMS. THE IMPORTANT POINT WHICH HAS BEEN MADE FROM THESE LANDOWNER ALLEGATIONS IS THAT THERE SHOULD BE A REASONABLE AMOUNT OF STANDARDIZATION REFLECTED IN THESE MONETARY AGREEMENTS. LANDOWNERS WANT TO FEEL

CONFIDENT THAT THE SYSTEM WILL GUARANTEE THAT LANDOWNERS WITH EQUAL VALUE LAND ARE AWARDED EQUAL PAYMENTS.

THE ONTARIO GOVERNMENT WAS CONCERNED ABOUT THIS ISSUE AND SUPPORTED THIS CONCEPT. MANY QUESTIONS WERE PUT FORTH BY THE PROVINCE AT THE HEARINGS IN OTTAWA IN ORDER TO CLARIFY IPL'S POSITION ON THE MATTER AND ENSURE THAT A GOOD METHOD OF APPRAISAL WAS USED.

SEVERAL LANDOWNERS CALLED FOR A CLAUSE IN THE AGREEMENTS STATING THAT IF THE LAND WAS NOT RETURNED TO THE REASONABLE STATE OUTLINED IN ORIGINAL AGREEMENTS, THAT FURTHER LAND DEPRECIATION MONIES SHOULD BE AWARDED, SEPARATE FROM CONSTRUCTION OR CROP DAMAGES.

A LIST OF WHAT SOME LANDOWNERS REFERRED TO AS 'PRESSURE TACTICS' EMPLOYED BY THE LAND AGENTS WAS COMPILED. THE FOLLOWING ARE A FEW EXAMPLES:

- I) TELLING LANDOWNERS THAT IF THEY WERE EXPROPRIATED, THEY WOULD RECEIVE LESS MONEY THAN ORIGINALLY BEING OFFERED.
- II) IN THE NAPANEE AREA CHEQUES FOR EASEMENT RIGHTS WERE REPORTEDLY MAILED PRIOR TO THE COMPLETION OF NEGOTIATIONS.
- III) SENDING OPTION AGREEMENT CHEQUES IN THE MAIL NEAR CHRISTMAS TIME GAVE THE IMPRESSION OF ENCOURAGING CONVENIENT ACCEPTANCE.

IV) UTILIZING MORE THAN ONE LAND AGENT WAS REGARDED AS A TACTIC TO BREAK DOWN FARMERS WHO DIDN'T AGREE TO THE ORIGINAL EASEMENT OFFER.

IT IS DIFFICULT TO SAY WHETHER OR NOT THESE COMPLAINTS ARE TRUE. THE IMPORTANT POINT TO BE MADE HERE IS THAT LANDOWNERS FELT THAT THESE "PRESSURE TACTICS" WERE REAL. THIS CREATED AN EVEN MORE DIFFICULT WORKING ATMOSPHERE WITHIN WHICH THE CONSTRUCTION OF THE PIPELINE HAD TO BE CARRIED OUT. LONGER LASTING FEELINGS OF BITTERNESS AND SCEPTICISM HAVE RESULTED WHICH WILL HAVE A BEARING ON FUTURE INTERACTIONS WITH THESE AND OTHER LANDOWNERS.

#### RECOMMENDATIONS FOR IMPROVING CONSTRUCTION PROCEDURES

SUGGESTIONS FOR IMPROVING CONSTRUCTION PROCEDURES INCLUDED INFORMATION EXCHANGE AND CONSTRUCTION TECHNIQUES. LANDOWNERS FELT THAT THERE EXISTED A COMMUNICATION PROBLEM BETWEEN IPL, BECHTEL AND THE CONTRACTORS. LAND AGENTS DID NOT ALWAYS GATHER THE APPROPRIATE INFORMATION TO RELAY TO CONSTRUCTION WORKERS. BECHTEL INSPECTORS DID NOT ALWAYS HAVE THE AUTHORITY TO PROCEED ON CERTAIN MATTERS. LANDOWNERS NEVER SEEMED TO KNOW THE APPROPRIATE PERSON TO SPEAK WITH CONCERNING A PARTICULAR PROBLEM.

SECONDLY, LANDOWNERS FELT THAT THERE WERE NOT ENOUGH ADEQUATELY TRAINED INSPECTORS. TO ALLEVIATE CONSTRUCTION PROBLEMS, LANDOWNERS SUGGESTED THAT CONSTRUCTION WORKERS SHOULD BE BETTER EDUCATED ABOUT FARMING CONCERNS AND PRACTICES. OUR STAFF FELT THAT CONTRACTORS SHOULD BE PLACED UNDER PERFORMANCE BONDS OF SOME SORT TO ENSURE THAT ORIGINAL AGREEMENTS ARE MET, ESPECIALLY

WITH REGARDS TO TOPSOIL REPLACEMENT AND ADDITIONAL LANDS BEING TAKEN. LANDOWNER AND CONTRACTOR LIAISON SHOULD ALSO BE IMPROVED SO THE FARMER CAN EASILY CHECK CONSTRUCTION PROCEDURES AND INFORM CONTRACTORS OF PARTICULAR PROBLEMS. THE MOST COMMON LANDOWNER RECOMMENDATION FOR IMPROVING CONSTRUCTION TECHNIQUES WAS TO STOP CONSTRUCTION IN BAD WEATHER. A CONCERN FOR MORE EFFICIENT, ORGANIZED AND COMPETENT CONSTRUCTION MANAGEMENT WAS VOICED BY MANY RESPONDENTS.

MAJOR LANDOWNER SUGGESTIONS FOR IMPROVING THE CLEAN-UP AND RESTORATION PROCESS ARE AS FOLLOWS:

- A) MORE AVAILABLE INFORMATION ON HOW TO ASSESS DAMAGES;
- B) STANDARDIZED MONIES AWARDED FOR LANDOWNERS WHO DO CLEAN-UP JOBS THEMSELVES;
- C) CLEAN-UP BEING CONDUCTED AS SOON AS CONSTRUCTION IS FINISHED, WHERE WEATHER CONDITIONS PERMIT;
- D) MORE SPECIFIC GUIDELINES FOR SOIL AND CROP RESTORATION PROGRAMS.

LANDOWNERS REQUESTED IMPROVED CLEAN-UP TECHNIQUES THAT REQUIRED:

- A) REMOVAL OF ADDITIONAL STONES BEING UPTURNED ONCE PLOWING WAS COMPLETED;
- B) MORE THAN JUST THREE-INCH AND OVER STONES BEING REMOVED;
- C) REPAIR OF FAULTY FENCING;
- D) PROPER TOPSOIL REMOVAL TO ITS FULL DEPTH AND REPLACEMENT;
- E) COMPENSATION FOR DAMAGES OFF THE AGREED UPON ROW.

### **3. CONCLUSIONS**

THE PRECEEDING SECTIONS OF THIS REPORT HAVE PROVIDED THE READER WITH BACKGROUND ON: THE PROJECT, THE PROJECT PROPONENT AND THE FEDERAL GOVERNMENT BODY RESPONSIBLE FOR REVIEW AND APPROVAL OF THIS PROJECT. INFORMATION HAS ALSO BEEN PROVIDED ON THE NATIONAL ENERGY BOARD HEARINGS, LAND EXPROPRIATION PROCEDURES AND THE ROLE PLAYED BY THE ONTARIO GOVERNMENT. SUBSEQUENT SECTIONS OF THIS REPORT HAVE IDENTIFIED SPECIFIC PROBLEMS THAT OCCURRED DURING ALL OTHER STAGES OF THE PROJECT. THROUGHOUT THE STAGE ONE AND TWO STUDIES LANDOWNERS AND PROVINCIAL RESEARCHERS HAVE MADE RECOMMENDATIONS THAT APPLY TO THE SPECIFIC PROBLEMS THAT WERE IDENTIFIED.

THE RECOMMENDATION SECTION, WHICH FOLLOWS, MAKES FINAL SUGGESTIONS ON BROADER ISSUES RELATING TO THE PIPELINE PLANNING DEVELOPMENT PROCESS. THESE RECOMMENDATIONS FORM A FRAMEWORK FOR INTEGRATING THE RECOMMENDATIONS FROM SECTION TWO OF THE REPORT AND FOR IMPROVING PLANNING PROCEDURES AND PRACTICE ON FUTURE PIPELINE DEVELOPMENT PROPOSALS.

IT HAS BECOME CLEAR FROM THESE INVESTIGATIONS THAT TO AVOID THE TYPE OF PROBLEMS IDENTIFIED IN THIS REPORT, THE NATIONAL ENERGY BOARD AND PIPELINE COMPANIES MUST, IN FUTURE APPLICATIONS, CONSIDER CHANGES TO PRESENT POLICY, PROCEDURE AND PRACTICE. THE DISCUSSION WHICH FOLLOWS HIGHLIGHTS THE AREAS WHERE IT IS APPARENT THAT CHANGES ARE REQUIRED.

WE FOUND THAT THE EARLY PROJECT PLANNING STAGE HAS BOTH IMMEDIATE AND LONG-TERM EFFECTS ON LANDOWNERS. THEIR INVOLVEMENT, OR LACK OF IT, DURING THIS STAGE DETERMINES TO SOME EXTENT: WHY CERTAIN ENVIRONMENTAL FACTORS WERE ACCOUNTED FOR AND OTHERS WERE NOT; WHY LANDOWNERS HAD CERTAIN RIGHTS AND NOT OTHERS AND WHY SOME WERE FRUSTRATED AND OTHERS APPEARED TO BE SATISFIED.

IPL AND ITS ENVIRONMENTAL MANAGER, BECHTEL CANADA LTD., WERE FAIRLY INVOLVED WITH THE LANDOWNERS FROM THE NEGOTIATION STAGE ONWARDS, BUT THERE WAS LITTLE LANDOWNER INVOLVEMENT DURING EARLIER PROJECT PLANNING STAGES. IT IS IMPORTANT FOR THE READER TO KEEP IN MIND THAT ALTHOUGH LANDOWNERS MAY HAVE BEEN CONTACTED AT AN EARLY STAGE FOR THE SIGNING OF OPTION AGREEMENTS, THEIR INVOLVEMENT AND CONTRIBUTION TO THE PROJECT PLANNING AT THAT TIME WAS NEVERTHELESS MINIMAL. THE RESULTS OF OUR RESEARCH SHOWS THAT LANDOWNERS HAD MUCH TO CONTRIBUTE. YET, WE FOUND THAT LANDOWNERS KNEW LITTLE OR NOTHING ABOUT THE PROJECT DURING ITS PLANNING AND APPROVAL STAGES. PROVINCIAL RESEARCHERS FOUND THAT THERE APPEARED TO BE A CORRELATION BETWEEN THE AMOUNT OF INFORMATION THAT THE LANDOWNERS HAD AND THE EXTENT TO WHICH THEY APPEARED TO BE SATISFIED WITH CONSTRUCTION AND RESTORATION ON THEIR PROPERTY. WE ALSO FOUND THAT THERE WAS A STRONG CORRELATION BETWEEN THE RELATIVE SUCCESSES OR FAILURES OF PHYSICAL EFFECTS OF CONSTRUCTION AS IDENTIFIED IN STAGE 1 STUDIES AND LANDOWNERS SATISFACTION OR DISSATISFACTION. WE CONCLUDED THAT IT WOULD HAVE MADE GOOD COMMON SENSE TO ENCOURAGE STRONG LANDOWNER INVOLVEMENT DURING THE EARLY PLANNING OF THE PROJECT.

OTHER MAJOR PROBLEMS WERE IDENTIFIED WITH NATIONAL ENERGY BOARD AND PIPELINE COMPANY MANAGEMENT PRACTICES AND PROCEDURES. THE PHASE II ENVIRONMENTAL REPORTS EXPECTED WERE NEVER PRODUCED BY IPL - AND THE NEB DID NOT ORDER THE PRODUCTION OF THESE IMPORTANT REPORTS. RECOMMENDATIONS THAT WERE MADE IN THE ENVIRONMENTAL REPORTS WERE NOT TRANSLATED AT AN APPROPRIATE TIME (DURING THE PLANNING STAGE) INTO SUFFICIENTLY DETAILED DRAWINGS AND SPECIFICATIONS OF REQUIREMENTS THAT WOULD PROTECT THE ENVIRONMENT AND THE LANDOWNERS. IF THE READER REFERS TO RECOMMENDATIONS MADE IN SECTION TWO OF THIS REPORT, IT BECOMES QUITE EVIDENT WHAT SORT OF DETAIL WOULD HAVE BEEN REQUIRED TO DOCUMENT ADDRESS THE ISSUES. THERE IS LITTLE TO BE GAINED IN PREPARING ANY REPORTS IF THE COMPREHENSIVENESS AND DETAIL IS NOT ADEQUATE AND IF THE FINDINGS OF THOSE REPORTS ARE NOT EFFECTIVELY AND FAIRLY CONSIDERED IN THE PLANNING AND APPROVALS PROCESS AND FINALLY REFLECTED IN FIELD PRACTICE.

IPL MAINTAINED THAT THE CONTRACTORS HIRED TO CONSTRUCT THEIR PIPELINE MUST BE ABLE TO DETERMINE THEIR OWN CONSTRUCTION METHODS. WE FOUND THAT THE CONTRACTORS WERE NOT PROVIDED WITH AND DID NOT PRODUCE SUFFICIENTLY DETAILED CONSTRUCTION CONTRACTORS AND RESTORATION PLANS AND PROCEDURES. THE CONSTRUCTION CONTRACTORS DID NOT HAVE EITHER THE INFORMATION, EXPERIENCE ~~OR~~ QUALIFIED PEOPLE ON STAFF TO IDENTIFY ENVIRONMENTAL PROTECTION MEASURES AND PREPARE THE DETAILED MITIGATION PLANS AND PROCEDURES REQUIRED. FURTHERMORE, THE CONTRACTOR WOULD HAVE DIFFICULTY IN SUBMITTING ACCURATE BID ESTIMATES ON THE JOB

BECAUSE MUCH OF THE SPECIFIC INFORMATION HE SHOULD HAVE HAD WAS NOT AVAILABLE IN THE BID DOCUMENTS. THE LATER INCLUSION OF ENVIRONMENTAL PROTECTION MEASURES REQUIRING ADDITIONAL TIME OR CAPITAL COULD HAVE PLACED PRESSURE ON THE CONTRACTORS WHO WERE NOT EXPECTING THESE EXPENDITURES. THE COMPANY ALLOWED THE CONTRACTORS TO BILL THESE COSTS AS EXTRAS, BUT THEN THE COMPANY'S COST ESTIMATES AND NORMAL ENGINEERING CONTINGENCY BUDGETS MUST MEET THE COST ESCALATIONS. THIS IS NOT GOOD BUSINESS MANAGEMENT.

UNDER THE CIRCUMSTANCES DESCRIBED ABOVE, THE VARIOUS GOVERNMENT MINISTRIES AND AGENCIES, AND THE PUBLIC WHO WERE CONCERNED ABOUT THE EFFECTS OF THE IPL CONSTRUCTION COULD NOT EFFECTIVELY REVIEW PLANS AND PROCEDURES IN ADVANCE BECAUSE THE INFORMATION THAT WAS AVAILABLE WAS NOT SUFFICIENTLY DETAILED TO PERMIT CONSTRUCTIVE COMMENT. IPL MANAGEMENT PROCEDURES PLACED THE PROVINCIAL ENVIRONMENTAL INSPECTORS IN THE DIFFICULT POSITION OF ALWAYS HAVING TO RESPOND DURING OR AFTER THE CONSTRUCTION AND RESTORATION ACTIVITIES HAD TAKEN PLACE AND WHEN MANY PROBLEMS HAD ALREADY OCCURRED. IT IS WORTH NOTING THAT ANY NATIONAL ENERGY BOARD INSPECTORS WERE IN THE SAME POSITION.

THESE MANAGEMENT PROCEDURES CREATED SIMILAR DIFFICULTIES FOR BECHTEL'S ENVIRONMENTAL INSPECTORS. THEY WERE IN A DIFFICULT POSITION BECAUSE THE CONTRACTORS ON MANY OCCASIONS INSISTED ON USING CONSTRUCTION PROCEDURES THAT LANDOWNERS AND/OR PROVINCIAL GOVERNMENT INSPECTORS CONSIDERED UNACCEPTABLE. ALTHOUGH BECHTEL'S ENVIRONMENTAL INSPECTORS MAY HAVE PROVIDED GOOD ADVICE, THEY APPARENTLY WERE NOT GIVEN ADEQUATE



AUTHORITY ON THE JOB. THEY HAD FEW DETAILED PLANS AND SPECIFICATIONS AVAILABLE TO SUPPORT THEIR POSITION THAT COULD BE USED TO DIRECT AND REQUIRE CONTRACTORS TO CARRY OUT PROPER PROTECTION MEASURES.

TO CONCLUDE FROM THE MAJOR FINDINGS OF THE RESEARCH, IT WOULD BE FAIR TO STATE THAT THE MANAGEMENT PROCEDURES FOLLOWED IN THE IPL DEVELOPMENT REQUIRE CONSIDERABLE IMPROVEMENT. WE ARE HOPEFUL THAT THE NATIONAL ENERGY BOARD IS SUFFICIENTLY CONCERNED ABOUT THE PROVINCIAL AND LANDOWNER CONCERNS REPRESENTED IN THIS REPORT TO INCORPORATE THE RECOMMENDATIONS THAT FOLLOW AS REGULAR REQUIREMENTS ON ALL FUTURE APPLICATIONS. NO CHANGES CAN OR WILL OCCUR UNTIL THE NEB VIEWS ITS ROLE AND RESPONSIBILITIES IN A MUCH WIDER PERSPECTIVE. TO ITS CREDIT, THE BOARD HAD OFTEN MADE ADDITIONAL ORDERS IN AN ATTEMPT TO PROTECT THE PUBLIC INTEREST AND INSTITUTED THE REQUIREMENTS FOR ENVIRONMENTAL REPORTS. UNFORTUNATELY, NEB INSPECTION AND MONITORING TO SEE THAT THEIR ORDERS RELATING TO ENVIRONMENTAL MATTERS ARE CARRIED OUT WAS VERY POOR OR NON-EXISTENT.

THIS MINISTRY'S INVESTIGATION OF THE EFFECTS OF THE IPL SARNIA TO MONTREAL CONSTRUCTION REPRESENTS ONE OF THE FIRST INVESTIGATIONS OF THIS TYPE OF PIPELINE CONSTRUCTION FOR ONTARIO. SINCE THE INSTITUTION OF THESE STUDIES, THIS MINISTRY HAS ALSO INVESTIGATED IN A MORE INFORMAL MANNER, THE CONSTRUCTION OF OTHER PIPELINES THAT FALL UNDER THE JURISDICTION

NATIONAL ENERGY BOARD AND THE ONTARIO ENERGY BOARD. WE HAVE FOUND, IN GENERAL TERMS, THAT THE BASIC PROBLEMS IDENTIFIED IN THIS REPORT ARE NOT UNIQUE TO THE INTERPROVINCIAL PIPELINE CONSTRUCTION. THEREFORE, WE FEEL THAT THE RECOMMENDATIONS WHICH FOLLOW, IF IMPLEMENTED, MAY HELP TO IMPROVE THE CURRENT STATE OF PRACTICE AND PLANNING FOR ALL PIPELINE DEVELOPMENTS IN THIS PROVINCE.

## **4. RECOMMENDATIONS**

### 4.1 THE PLANNING STAGE

4.1.1 THE NATIONAL ENERGY BOARD SHOULD CONSIDER REVISING THE GUIDELINES THAT CALL FOR THE PRODUCTION OF ENVIRONMENTAL REPORTS TO INCORPORATE THE CONSIDERATIONS IDENTIFIED IN THE RECOMMENDATIONS THAT FOLLOW.

4.1.2 WE RECOMMEND A TWO PHASE PROCESS. IN THE FIRST PHASE THE ENVIRONMENTAL REPORT SHOULD DOCUMENT THE EXAMINATION OF ALTERNATIVE ROUTINGS FOR THE PIPELINE PROPOSED. (WE ARE ASSUMING THAT ALTERNATIVE METHODS OF TRANSPORTING THE PRODUCT HAVE BEEN EXAMINED AND DOCUMENTED ELSEWHERE.) ALTERNATIVE ROUTINGS SHOULD BE DETERMINED BY FIRST IDENTIFYING CONSTRAINTS WITHIN THE STUDY AREA. CONSTRAINTS MAY BE ENGINEERING FACTORS, NATURAL FEATURES (I.E. WILDLIFE, VEGETATION, GEOLOGICAL CONDITIONS, WATER RESOURCES, ETC.) SOCIO-ECONOMIC FACTORS, ETC. EACH OF THESE ALTERNATIVES, THEIR CONSTRAINTS AND THE REQUIRED MITIGATION MEASURES SHOULD THEN BE STUDIED, COSTED AND COMPARED IN APPROPRIATE DETAIL. AS THE ROUTE ANALYSIS AND COMPARISON CONTINUES AND SOME ALTERNATIVES ARE ELIMINATED, MORE DATA WILL BE REQUIRED TO PERMIT COMPARISONS AND EVALUATION OF SITE SPECIFIC CONSTRUCTION AND RESTORATION PROCEDURES BASED ON THE MAJOR FEATURES OF THE PREFERRED ALTERNATIVE(S). FOR EXAMPLE, IN ORDER TO DETERMINE AND COMPARE MITIGATION PROCEDURES AND COSTS FOR STREAM CROSSINGS AND STEEP SLOPE AREAS DETAILS OF SOIL

CHARACTERISTICS AND GEOLOGICAL BASE MATERIALS AMONG OTHER TYPES OF INFORMATION MUST BE AVAILABLE FOR THOSE AREAS. IF THERE IS A DESIRE TO SELECT A ROUTE THAT BOTH MINIMIZES ENVIRONMENTAL IMPACT AND PROJECT COSTS THIS IS THE TYPE OF COMPARATIVE ANALYSIS THAT WILL BE NECESSARY. THE EVALUATION MUST INCLUDE BOTH ON RIGHT-OF-WAY AND OFF RIGHT-OF-WAY CONSIDERATIONS.

USING THIS METHOD, SITE SPECIFIC CONSTRUCTION AND RESTORATION PROCEDURES CAN BE DEVELOPED AS THE ANALYSIS PROCEEDS TO ITS FINAL STAGES. THESE SITE SPECIFIC PROCEDURES SHOULD BE SUFFICIENTLY DETAILED TO PERMIT DEVELOPMENT OF PROJECT SPECIFICATIONS FROM THE REPORT.

FINAL DOCUMENTATION SHOULD INCLUDE CONTINGENCY PLANS AND SPECIFICATIONS THAT ACCOUNT FOR UNUSUAL CONDITIONS. THIS WOULD ELIMINATE THE POOR CONSTRUCTION PRACTICES OBSERVED ESPECIALLY DURING TIMES OF POOR WEATHER CONDITIONS. WHERE CONTINGENCY PLANS MUST BE PUT INTO EFFECT, NOTIFICATION PROCEDURES FOR ALL CONCERNED PARTIES SHOULD BE ESTABLISHED. THE SECOND PHASE OF THIS PROCESS IS DISCUSSED IN RECOMMENDATION 4.1.6.

- 4.1.3 SPECIAL EFFORT SHOULD BE MADE BY THE COMPANY OR THEIR CONSULTANTS TO ENCOURAGE PUBLIC INVOLVEMENT AND PARTICIPATION SUCH THAT PUBLIC CONCERNS WILL BE

IDENTIFIED AT AN EARLY STAGE AND DOCUMENTED IN THE ENVIRONMENTAL REPORT. MORE SPECIFICALLY, WE WOULD SUGGEST THE FOLLOWING:

- A) ALL LANDOWNERS ON ALTERNATIVE ROUTES CONSIDERED SHOULD BE GENERALLY NOTIFIED OF THE COMPANY'S APPLICATION FOR CERTIFICATION. SO, TOO, IN THE DISCRETION OF THE NATIONAL ENERGY BOARD, SHOULD OTHER PERSONS OR GROUPS WHOSE PARTICIPATION WOULD BE BENEFICIAL. THERE ARE MANY DIFFERENT WAYS THAT THIS NOTIFICATION CAN BE MADE. WE WOULD ENCOURAGE THE PIPELINE COMPANIES AND THE BOARD TO REVIEW CURRENT PROCEDURES AVAILABLE STUDIES TO DETERMINE THE MOST EFFECTIVE MEANS.
  
- B) ALL SUCH PERSONS MENTIONED ABOVE SHOULD HAVE THE OPPORTUNITY OF PARTICIPATING IN LOCAL INFORMATION EXCHANGE MEETINGS THAT COULD BE HELD (BY THE COMPANY OR THEIR CONSULTANTS) TO DETERMINE THE BEST POSSIBLE LOCATION OF THE PROPOSED LINE, THE MOST APPROPRIATE PLANNING OF CONSTRUCTION TIMING, LAND ACQUISITION AND CONSTRUCTION PROCEDURES FOR THE PEOPLE AFFECTED. OTHER PUBLIC PARTICIPATION TECHNIQUES CAN BE OF VALUE IN DETERMINING THESE CONCERNS AS WELL.

- 4.1.4 CONCERNED FEDERAL AND PROVINCIAL GOVERNMENT COMMENTS SHOULD BE SOLICITED AND APPROPRIATELY ADDRESSED IN THE ENVIRONMENTAL REPORT. THE ENVIRONMENTAL REPORT, GENERAL SPECIFICATIONS, PLANS AND DRAWINGS SHOULD ALL BE MADE AVAILABLE TO THESE GOVERNMENT GROUPS AND INTERESTED MEMBERS OF THE PUBLIC WELL IN ADVANCE OF NATIONAL ENERGY BOARD HEARINGS.
- 4.1.5 THE ONTARIO GOVERNMENT SHOULD CONSIDER THE FORMALIZATION OF PRESENT PROCEDURES. FORMALIZATION OF REVIEW PROCEDURES WOULD LEND GUIDANCE TO THE PUBLIC, THE GOVERNMENT REVIEWERS AND ANY PIPELINE COMPANIES OR THEIR CONSULTANTS WHO PROPOSE WORK IN THE PROVINCE. THE CO-ORDINATING BODY COULD DEVELOP AND MAKE AVAILABLE A PROCEDURAL DOCUMENT AND COULD ACT AS INITIAL CONTACT IN THE PROVINCIAL REVIEW. THE PROCEDURAL DOCUMENT MIGHT INCLUDE FOR EXAMPLE AN EXPLANATION OF PROVINCIAL POLICY, REQUIREMENTS AND CONCERNS VIS-A-VIS PROPOSED PIPELINE DEVELOPMENTS; A LISTING OF ALL GOVERNMENT CONTACTS FOR EACH MINISTRY AND AGENCIES IN THE PROVINCE; AND INCLUDE NOTATIONS ON ANY PROVINCIAL REVIEW PROCEDURES THAT MAY APPLY.

4.1.6 AFTER A FORMAL HEARING BY THE NATIONAL ENERGY BOARD AND ISSUE OF THE 'CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY' THE BOARD SHOULD ORDER THE APPLICANT TO PREPARE AND SUBMIT A FINAL ENVIRONMENTAL REPORT AND DETAILED PLANS, DRAWINGS AND SPECIFICATIONS THAT APPLY TO THE SELECTED ROUTE. THIS INFORMATION WOULD PROVIDE A FINAL INDICATION OF CONSTRUCTION PROCEDURES AND, MITIGATION MEASURES AND WOULD INCLUDE CONTINGENCY PLANS FOR ALL AREAS THAT THE PIPELINE WOULD TRAVERSE. THE DOCUMENT SHOULD INCLUDE DETAILS ON AGREEMENTS WITH EACH LANDOWNER. THIS FINAL INFORMATION SHOULD BE PUBLICLY AVAILABLE AND PROVIDED TO THOSE GOVERNMENT BODIES INVOLVED IN THE INITIAL REVIEW AND TO OTHER INTERESTED LANDOWNERS AND PARTIES AS DETERMINED BY THE BOARD. THE FINAL ROUTE ALIGNMENT AND WORKING AREA SHOULD BE SURVEYED AND STAKED AT THIS TIME SO THAT ALL CONCERNED PARTIES ARE CLEAR AS TO THE LOCATION OF THE LINE. ALL OF THIS INFORMATION SHOULD BE MADE AVAILABLE AT LEAST ONE MONTH IN ADVANCE OF CONSTRUCTION. FAILURE TO OBJECT WOULD BE TAKEN AS ACCEPTANCE OF THE FINAL DOCUMENTATION. SOME MECHANISM SHOULD BE PROVIDED TO DEAL WITH ANY OBJECTIONS RAISED AT THIS STAGE.

- 4.1.7 LANDOWNERS SHOULD BE PROVIDED COPIES OF DETAILED PLANS, DRAWINGS AND SPECIFICATIONS MENTIONED ABOVE AS THEY APPLY TO THEIR PROPERTY.

#### 4.2 THE NEGOTIATION STAGE

ONE OF THE MOST SENSITIVE STAGES IN THE PIPELINE DEVELOPMENT PROCESS IS THE NEGOTIATION STAGE. THE INITIAL APPROACH BY LAND AGENTS IS CRUCIAL.

- 4.2.1 DIFFERENCES IN EXPERIENCE AND SKILL IN LAND ACQUISITION AMONG VARIOUS LAND AGENTS INDICATES THE NEED FOR CLOSE MONITORING OF THIS PROCESS BY THE NEB. THERE SHOULD BE A SIMPLE PROCEDURE ESTABLISHED WHEREBY VARIANCES FROM GOOD, ETHICAL PRACTICES BY LAND AGENTS COULD BE BROUGHT TO THE ATTENTION OF THE BOARD. SEE RECOMMENDATION 5 OF THIS SECTION FOR ONE SUGGESTION ON HOW LANDOWNERS MIGHT BECOME INFORMED OF PROPER PROCEDURE AND PRACTICE.

- 4.2.2 THE LANDOWNER SHOULD HAVE SUFFICIENT ADVANCE NOTICE OF THE SPECIFIC LOCATION OF THE PIPELINE AND THE LAND REQUIRED INCLUDING PROPOSED MITIGATION MEASURES, ETC., SO THAT HE CAN ADEQUATELY ASSESS THE CONSEQUENCES OF THE PIPELINE CONSTRUCTION BEFORE HE IS REQUIRED TO SIGN ANY AGREEMENTS.

- 4.2.3 MANY PROBLEMS IN NEGOTIATIONS WHICH RESULTED IN THE NEED FOR EXPROPRIATION APPEARED TO BE RELATED TO COMPENSATION.



MINISTRY RESEARCH SHOWED INCONSISTENCIES IN THE AMOUNTS OFFERED, WHICH APPEARED UNRELATED TO THE WORTH OF THE LAND IN QUESTION. THE PIPELINE COMPANIES SHOULD BE REQUIRED TO EMPLOY PROFESSIONAL APPRAISERS TO SYSTEMATICALLY EVALUATE THE LANDS AND SHOULD BE REQUIRED TO MAKE FAIR AND CONSISTENT OFFERS TO LANDOWNERS BASED ON SUCH APPRAISAL.

4.2.4 STANDARDIZED AND CONSISTENT COMPENSATION RATES OR METHODS OF ESTABLISHING COMPENSATION FOR DAMAGE LOSSES SHOULD BE ESTABLISHED WHERE POSSIBLE.

4.2.5 SOME OF THE PROBLEMS EXPERIENCED BY LANDOWNERS DURING NEGOTIATIONS STEM FROM A LACK OF CORRECT INFORMATION AND POOR COMMUNICATION BETWEEN THE LAND AGENT AND THE LANDOWNER. RUMOURS ABOUND OVER THE PRICES PAID FOR EASEMENTS AND DAMAGE SETTLEMENT. THESE RUMOURS ARE DIVISIVE AND ALIENATE MANY LANDOWNERS MAKING VOLUNTARY SALES AND AGREEMENTS EVEN MORE DIFFICULT. IT IS RECOMMENDED THAT PRICES AWARDED FOR WORKING AREAS, PERMANENT EASEMENTS, AND DAMAGE SETTLEMENTS ALONG WITH REASONS, BE PUBLISHED. IT IS IMPORTANT TO NOTE THAT SOME OF THIS INFORMATION IS ALREADY PUBLICLY AVAILABLE AT LOCAL LAND REGISTRY OFFICES.

4.2.6 WE SUGGEST THAT THE NATIONAL ENERGY BOARD PREPARE A COMPREHENSIVE, STANDARDIZED, EASILY READ PUBLIC DOCUMENT THAT WOULD BE PRESENTED TO LANDOWNERS BY ANY PIPELINE COMPANY PROPOSING CONSTRUCTION ACTIVITIES ON THEIR PROPERTY. THE DOCUMENT COULD INCLUDE, FOR EXAMPLE, AN EXPLANATION OF THE RIGHTS

AND PRIVILEGES THAT THE LANDOWNER HAS GENERALLY AVAILABLE IN HIS NEGOTIATIONS WITH THE COMPANY IN QUESTION. THE DOCUMENT MIGHT EXPLAIN IN SIMPLE TERMS SOME OF THE MORE USUAL PROVISIONS OF THE LEGAL AGREEMENTS REQUIRED BETWEEN THE LANDOWNER AND THE PIPELINE COMPANY AND SUGGEST MORE APPROPRIATE PRIVATE LEGAL CONSULTATION. THE DOCUMENT COULD INCLUDE A CHECKLIST OF ITEMS THAT THE LANDOWNER SHOULD CONSIDER IN HIS DISCUSSIONS WITH THE PIPELINE COMPANY REPRESENTATIVES. FOR EXAMPLE, LIVESTOCK ACCESS, FENCING REQUIREMENTS, TOPSOIL REMOVAL AND REPLACEMENT, TREE PROTECTION, FARM EQUIPMENT ACCESS, ETC. IT IS POSSIBLE THE BOARD MAY WISH TO ATTACH ADDENDA TO THE STANDARD DOCUMENT THAT WOULD IDENTIFY MORE SPECIFIC CONCERNS RELATING TO INDIVIDUAL PIPELINES.

4.2.7 THE MINISTRY WOULD LIKE TO ENCOURAGE THE DEVELOPMENT OF STANDARD FORM AGREEMENTS TO BE UTILIZED IN THE ACQUISITION OF LAND. MANY OWNERS HAVE DIFFICULTY UNDERSTANDING THE FINE PRINT IN THE AGREEMENTS NOW BEING USED. LAND AGENTS DID NOT EXPLAIN THE DETAILED NATURE OF THESE AGREEMENTS. THE MOST BLATANT EXAMPLE OF THIS IS THE FACT THAT THE MAJORITY OF LANDOWNERS IN THE NEW EASEMENT AREA DID NOT KNOW THAT THE EASEMENT ALLOWED FOR MORE THAN ONE PIPELINE. THE PROVINCIAL POSITION IS THAT AN EASEMENT SHOULD ONLY ALLOW FOR ONE PIPELINE. STANDARD AGREEMENTS SHOULD BE SUPPLEMENTED WHERE POSSIBLE WITH EXPLANATIONS IN SIMPLE LANGUAGE ABOUT WHAT TERMS REALLY MEAN. THIS SUGGESTION MAY MOST APPROPRIATELY BE DEALT WITH IN THE DOCUMENT PROPOSED

IN RECOMMENDATION 4.2.6. IF OPTION AGREEMENTS ARE TO BE USED, THE LANDOWNER MUST BE WELL INFORMED WHEN APPROACHED AS TO WHAT THE OPTION ENTAILS.

4.2.8 IT IS RECOMMENDED THAT LANDOWNERS BE PROVIDED WITH A LIST OF CONTACT PEOPLE, NAMES, ADDRESSES AND TELEPHONE NUMBERS FOR THE PIPELINE COMPANY REPRESENTATIVES, THE ONTARIO GOVERNMENT REPRESENTATIVES AND THE NATIONAL ENERGY BOARD.

4.2.9 IT WOULD APPEAR THAT THERE IS A NEED FOR SOME LEGISLATIVE CHANGES IN EXPROPRIATION LAW AS SUGGESTED BY THE LAW REFORM COMMISSION REPORTS WHICH HAVE BEEN REFERRED TO EARLIER IN THIS REPORT.

IN SUMMARY, THE INTENT OF THESE RECOMMENDATIONS IS TO ENCOURAGE THE FOLLOWING OBJECTIVES:

- A) EQUITABLE AND CONSISTENT TREATMENT OF ALL THOSE AFFECTED;
- B) SIMPLICITY AND ACCESSIBILITY OF AVAILABLE INFORMATION;
- C) STANDARD COMPENSATION FOR ALL PROVEN LOSSES;
- D) EQUITABLE COMPENSATION FOR EASEMENTS AND SIMILAR DAMAGE LOSSES;
- E) THE RIGHT TO A HEARING FOR ALL THOSE AFFECTED.

### 4.3 THE CONSTRUCTION STAGE

- 4.3.1 AT LEAST ONE MONTH PRIOR TO COMMENCEMENT OF CONSTRUCTION INDIVIDUAL LANDOWNERS SHOULD RECEIVE A COPY OF THE DETAILED PLANS, SPECIFICATIONS AND DRAWINGS FOR THE CONSTRUCTION ON HIS PROPERTY. THOSE DOCUMENTS WOULD INCLUDE THE REQUIREMENTS AGREED TO PREVIOUSLY BETWEEN THE LANDOWNER AND THE PIPELINE COMPANY REPRESENTATIVES.
- 4.3.2 THE ULTIMATE SUCCESS OF FINAL RESTORATION AND CLEAN-UP SHOULD NOT REST ON THE LANDOWNER'S SHOULDERS. THE MINISTRY WOULD LIKE TO ENCOURAGE THE REDUCTION OF THE LANDOWNER'S RESPONSIBILITY IN THIS TASK. AGREEMENTS BETWEEN CONTRACTORS AND LANDOWNERS CAUSED CONSIDERABLE CONFUSION FOR PROVINCIAL INSPECTORS. WE FOUND, ON OCCASION, THAT RESTORATION FOR ENVIRONMENTAL PROTECTION OR GOOD MANAGEMENT WAS SOMETIMES NOT ACCOMPLISHED. WHEN PROVINCIAL INSPECTORS ASKED WHY, THE COMPANY ENVIRONMENTAL INSPECTOR WOULD OFTEN SAY THAT THE RESPONSIBILITY HAD BEEN LEFT TO THE LANDOWNER. THE DOCUMENTATION IN THE FINAL INFORMATION TO BE SUPPLIED TO GOVERNMENT BODIES SHOULD INCLUDE DETAILED AGREEMENTS WITH LANDOWNERS SO THAT AREAS OF CONCERN CAN BE APPROPRIATELY DISCUSSED AND DEALT WITH.
- 4.3.3 CONTRACTORS MUST BE BETTER EDUCATED TOWARDS ENVIRONMENTAL PRACTICES, ESPECIALLY AGRICULTURAL CONSIDERATIONS. LANDOWNERS SHOULD BE CONSULTED FOR THEIR KNOWLEDGE OF THEIR PROPERTY.

- 4.3.4 CONTRACTORS SHOULD BE PLACED UNDER A PERFORMANCE BOND TO ENSURE THAT ALL COMMITMENTS TO ENVIRONMENTAL PROTECTION AND EXPRESSED LANDOWNER CONCERNS ARE MET.
- 4.3.5 IT IS RECOMMENDED THAT MORE QUALIFIED COMPANY ENVIRONMENTAL INSPECTORS BE PROVIDED. THESE INSPECTORS SHOULD HAVE THE POWER AND KNOWLEDGE TO IMMEDIATELY RECTIFY INADEQUATE PROCEDURES. PROCEDURES MUST BE DEVELOPED TO ENSURE PROMPT DEPLOYMENT OF ENVIRONMENTAL PROTECTION MEASURES ON SHORT NOTICE WHEN REQUIRED.
- 4.3.6 NEB INSPECTORS WHO ARE QUALIFIED AND EXPERIENCED IN ENVIRONMENTAL MATTERS AND WHO HAVE STUDIED ALL DOCUMENTATION THOROUGHLY SHOULD BE IN THE FIELD BEFORE CONSTRUCTION, AT ALL TIMES DURING CONSTRUCTION AND AT FINAL RESTORATION.
- 4.3.7 FINAL CLEAN-UP AND RESTORATION PROCEDURES SHOULD BE IMPLEMENTED AS SOON AFTER CONSTRUCTION AS POSSIBLE. TEMPORARY AND FINAL MEASURES NECESSARY TO PROVIDE BASIC STABILIZATION FROM EROSION, SLUMPING, ETC. SHOULD BE PROVIDED IMMEDIATELY FOLLOWING CONSTRUCTION.
- 4.3.8 THE ONTARIO OR FEDERAL GOVERNMENT SHOULD CONSIDER ESTABLISHING A CERTIFICATION COURSE FOR CONSTRUCTION CONTRACTORS. THE OBJECTIVE OF THE COURSE WOULD BE TO PROMOTE A GREATER AWARENESS TO ENVIRONMENTAL SENSITIVITIES THAT THEY MIGHT ENCOUNTER IN THE FIELD AND TO FAMILIARIZE THEM WITH CONSTRUCTION TECHNIQUES DESIGNED TO MINIMIZE ADVERSE ENVIRONMENTAL CONSEQUENCES.

#### 4.4. THE RESTORATION STAGE

- 4.4.1 BEFORE FINAL RESTORATION COMMENCES, LANDOWNERS SHOULD BE APPROACHED FOR CONSULTATION ABOUT ANY UNEXPECTED SPECIFIC PROBLEMS THAT OCCURRED DURING CONSTRUCTION.
- 4.4.2 LANDOWNERS SHOULD BE ASKED TO INSPECT THE TEMPORARY AND FINAL CLEAN-UP BEFORE CONSTRUCTION CREWS ARE FINALLY RELEASED.
- 4.4.3 LANDOWNERS SHOULD BE WELL INFORMED OF ANY CONTINUING MONITORING PROGRAMS AND PROCEDURES TO BE FOLLOWED, INCLUDING APPROPRIATE PERSONS TO CONTACT IN THE EVENT THAT UNFORESEEN PROBLEMS OCCUR.
- 4.4.4 THE PIPELINE COMPANIES SHOULD BE REQUIRED TO PRODUCE FOR THE BOARD REGULAR MONITORING STUDIES ON ALL ASPECTS OF THEIR ROW'S TO DEMONSTRATE THE EFFECTIVENESS OF ALL STAGES OF THE PIPELINE DEVELOPMENT. GUIDELINES SHOULD BE DEVELOPED WHICH WOULD SPECIFY REQUIREMENTS.

THESE ARE THE MAJOR RECOMMENDATIONS RESULTING FROM THE IPL MONITORING STUDIES. AS NOTED PREVIOUSLY, THE ONTARIO LAW REFORM COMMISSION'S RECOMMENDATIONS PROVIDE VALUABLE SUPPORT TO SOME OF OUR FINDINGS. THE RECOMMENDATIONS MADE THROUGHOUT THE REPORT AND THE GENERAL RECOMMENDATIONS INCLUDED HERE REPRESENT THE FINAL SUMMARY ANALYSIS OF THE INVESTIGATIONS WHICH HAVE COMPRISED THIS PROJECT.

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## **6. APPENDICES**

APPENDIX A

SUBMISSION OF THE MINISTER OF ENERGY FOR ONTARIO, AN INTERVENOR,  
BEFORE THE NATIONAL ENERGY BOARD.

BEFORE THE NATIONAL ENERGY BOARD

IN THE MATTER OF the National Energy Board  
Act and the Regulations made thereunder

- and -

IN THE MATTER OF an Application by Interprovincial  
Pipe Line Limited for a Certificate of Public  
Convenience and Necessity to Construct a Pipe Line  
Extension from Sarnia, Ontario to Montreal, Quebec

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SUBMISSION OF THE  
MINISTER OF ENERGY FOR ONTARIO,  
AN INTERVENOR

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Ministry of Energy  
12th Floor  
56 Wellesley Street West  
Toronto, Ontario

BEFORE THE NATIONAL ENERGY BOARD

SUBMISSION OF THE  
MINISTER OF ENERGY FOR ONTARIO, AN INTERVENOR

1. The Minister of Energy for Ontario, hereinafter called "the Minister", hereby appears and intervenes in the above application, reserving the right to file material, adduce evidence, make argument and submissions and to participate in the hearing as circumstances may require and the Board permit.
2. It is intended that the proposed pipeline will travel some 450 miles through the Province of Ontario, hereinafter called "Ontario" and, accordingly, Ontario has a direct interest in the selection of the route and the method of construction as it affects environmental, agricultural, resource and financial considerations within the Province.
3. Ontario supports the adoption of a National Energy Policy for Canada and recognizes that it is in the national interest and more particularly in the interests of Quebec and the Maritime Provinces to extend an oil pipeline to Eastern Canada.
4. While supporting the extension of the pipeline, Ontario urges that the possible adverse effects on the Province be minimized.

ROUTE

5. It is Ontario policy that construction of new utility lines follow existing utility corridors insofar as that is practicable and the Minister generally supports Interprovincial Pipe Line Limited, hereinafter called "the Applicant", in adopting that principle in this application.

6. However, a new planning project known as the North Pickering Project (hereinafter called "the Project") has been initiated by Ontario.

7. The Ontario Hydro right of way, which it appears the Applicant proposed to follow, passes directly through the property covered by the Project and has been expropriated by Ontario in that area.

8. The Project is presently in the preliminary stages of planning and it is impossible accurately to assess the adverse impact of the presence of a 30 inch oil pipeline through the Project area.

9. Nevertheless, although the presence of the pipeline will be disruptive to the planning process and may cause substantial and costly problems during the later stages of development, Ontario is prepared to negotiate a right of way agreement with the Applicant through the Project on the expropriated Ontario Hydro right of way if the Board determines that it is in the national interest to follow that route. However Ontario will insist that suitable terms be negotiated in consideration of the easement, including an undertaking by the Applicant to assume all future additional costs caused by the presence of the pipeline including those costs associated with line crossings and other construction.

10. In considering route selection due regard must be had for agricultural, resource and environmental factors. Ontario has prepared guidelines which are to some extent based on those prepared by the National Energy Board which have at the request of the Board been filed by the Applicant as part of

its submission. Ontario's guidelines are attached hereto as Appendix A and it is submitted that the Applicant ought to undertake to follow the Ontario guidelines which provide the minimum criteria which should be met, and further, that the certificate be granted only upon the condition of compliance with this undertaking.

#### AGRICULTURAL

11. The proposed route passes through substantial and important producing farm land and will affect the productivity of the land during construction and perhaps thereafter. It is of major importance to Ontario that the productivity of its valuable agricultural lands be preserved and that any adverse effects of the proposed extension be absolutely minimized.

12. It is also of major importance that the rights of land owners be vigorously defended. Accordingly the Board should, within the scope of its general powers pursuant to the National Energy Board Act assert full responsibility for ensuring that the Applicant deals with land owners openly and fairly and should require the Applicant to review its standards of compensation to ensure that adequate compensation is offered for easements, rights of way and temporary working rights.

13. Ontario urges the Board to provide that all agreements with land owners for easements, rights of way or temporary working rights contain standard conditions. These should apply in the absence of express agreement with the

land owner to the contrary.

For these purposes, Ontario submits that the Board should require by an appropriate term or condition of any certificate granted that the terms and conditions attached hereto as Appendix B be incorporated as express terms in all agreements for easements, rights of way and temporary working rights. Alternatively it is submitted that the Board should hear evidence in these proceedings by way of review of the form of agreement used by the Applicant and withhold its approval of the requested certificate until satisfactory provisions are incorporated therein.

Further:

- (a) Full disclosure respecting the location of the pipeline easement should be made by the applicant to any land owner whose land is to be crossed before entering into any agreement, and each agreement should provide for minimum disturbance of agricultural use and ensure that the land will be restored to its original state;
- (b) Each such agreement should provide for the construction of one line of pipe only.

#### ENVIRONMENTAL AND RESOURCE CONSIDERATIONS

14. It is imperative that the environment of Ontario be protected both during and after construction and that extensive safeguards be developed and vigorously enforced. To assist the Applicant in isolating and identifying sensitive areas of concern in this regard, attached as Appendix C is a list prepared by Ontario. The list is illustrative only and

is not in any way intended to be exhaustive or to diminish the Applicant's responsibility to investigate fully the problems which may be caused by the construction and the procedures necessary to restore the land to its natural state. Further, the Applicant must take into consideration the effect of construction on areas not in the immediate path of the pipeline.

15. During construction the Applicant must take stringent precautions to preserve the natural beauty of the landscape and to minimize disruption of the natural order. Local areas of particular natural value must be avoided where possible and the Applicant should co-operate with local groups and associations in resolving environmental problems where they arise.

16. It is strongly suggested that construction crews be educated with respect to environmental concerns and that specific instruction and supervision be given concerning environmental protection procedures at various sensitive areas along the route.

17. Ontario is concerned about the hazards of river crossings and submits that extensive consideration be given to scheduling so that crossings can be made at the least harmful times.

18. It is suggested that specific and detailed studies be undertaken in the areas listed below prior to construction and that adequate methods, acceptable to the Board, be developed to alleviate any problems that may be revealed:

- (1) Identification of sensitive marine clays;
- (2) Identification of ground water problems;



- (3) Identification of unique and special interest areas;
- (4) Identification of timing constraints for water course crossings;
- (5) Detailed study of proposed Niagara Escarpment restoration;
- (6) Summary of water uses and users along route;
- (7) Study of specific wild life and aquatic habitats along route before and after construction;
- (8) Mitigation procedures through recreational areas;
- (9) Any additional studies required as a result of problems identified in the above studies.

19. Ontario submits that the Applicant should be responsible for reviewing subsequent to construction the effect that the construction has had on the land and the effectiveness of the repair procedures it has undertaken. It should report the results of this review to Ontario.

20. The proposed line runs through some of the most beautiful areas of Ontario which the Government of Ontario is dedicated to preserving in its natural state. In this regard large sums have been and are being spent in protecting and improving the natural resources of the Province.

21. It is of particular interest to Ontario that its fish, fowl and wildlife be energetically protected and that

their natural habitat not be disturbed unduly by construction of the line.

22. It is essential that proposed methods of construction be reviewed by the Board to ensure that damage is minimal and the restoration of the areas affected is complete.

23. As indicated in Paragraph 10 hereof, Ontario has developed guidelines which provide minimum standards of agricultural, environmental and natural resource protection and which include a list of material which should be filed before the granting of a certificate. (Attached as Appendix A). It is submitted that the Board require compliance with these guidelines as a term or condition of any approval that may be given.

24. In many of the areas of special importance referred to above, Ontario considers that certain technical standards should be followed:-

- (1) The wall thickness of pipe under all water courses crossed by the line should be at least 0.500 inches;
- (2) Block valves should be installed along the route in accordance with the American National Standard for Liquid Petroleum Transportation Piping Systems B31-4 - 434-15-2 (Proposed);
- (3) Such block valves and other motorised or remotely controlled block valves should be installed in a location acceptable to Ontario;
- (4) The general principles of the depth of cover over the line should be in accordance with the American National Standard for Liquid

Petroleum Transportation Piping Systems  
B31-4-434-6 except in areas where drainage  
is or may be critical;

- (5) Markers should be located not only at highways, fence lines, etc. but also where it might be important to ploughing operations for deep drainage or telephone cables;
- (6) Ontario should be advised of the procedures for final testing of the line and a Provincial Inspector should be present during the test;
- (7) During the operation of the line in Ontario, all leaks should be reported to Ontario as well as to the National Energy Board. The leak history of all National Energy Board Lines in Ontario should be available to Ontario on request;
- (8) If it is intended that now or in the future the line will also carry Liquid Petroleum Gases, then the design should incorporate the following special provisions in addition to the Canadian Standards Association (CSA) Code Z183:
  - (a) Block valves should be installed in accordance with the provisions of the gas code CSA Z-184-6-9-1-1;
  - (b) Remotely controlled valves should be installed as per CSA-Z-183-3-1-2-4-3

and as specified in the American  
National Standard for Liquid  
Petroleum Piping Systems B31.4-15-2  
(Proposed);

- (c) The approved working pressures shall  
be in accordance with the provisions  
of the gas code CSA Z 184.

Alternatively, it is requested that a  
further hearing be held by the Board  
to determine safe working pressures and  
other safety features if at some later  
date the Applicant proposes to move  
Liquid Petroleum Gases through the line.

#### INSPECTION

25. Ontario believes that the inspection procedures  
previously followed by the Board to be inadequate in the present  
case because of the particular beauty and fragility of the area  
to be traversed by the pipe line in Ontario and because of its  
recreational and resource importance.

26. It is submitted that a special team of inspectors  
be recruited and trained to ensure that the public interest of  
the people of Ontario is properly considered and protected.

27. As the environmental, resource and agricultural  
concerns above mentioned are of particular importance to Ontario,  
it is proposed that Ontario make available at provincial expense,  
qualified persons to be seconded to the National Energy Board

to supplement the inspection staff of the Board under the direction of the Board.

28. Alternatively, it is suggested that the additional inspectors be appointed by the National Energy Board after prior consultation with Ontario.

29. Ontario is prepared to make available to the Board's inspectors in each area lists of names and telephone numbers of suitable Provincial experts who would be available for consultation on short notice.

#### FINANCIAL CONSIDERATIONS

30. The proposed pipe line extension to Montreal is recognized as being for purposes of the national interest and more specifically for certain advantages to Quebec and the Maritime Provinces.

31. Ontario is seriously concerned that if the line is not properly financed, the burden of under utilization in the future might fall on Ontario.

32. Ontario submits that the costs of building and operating the extension be segregated in accordance with the normal procedures of the Board so that the costs of the extension can be properly evaluated in the future and that such information be available to Ontario on request.

33. Ontario submits that the Board should insist that the project be self-supporting and self-sufficient and that the

Applicant arrange its financing and rate schedules so that Ontario is protected against any undue subsidy that might arise in the future.

ALL OF WHICH IS RESPECTFULLY SUBMITTED

D. H. Rogers.

of Counsel for the Minister

## APPENDIX A

### ENVIRONMENTAL, AGRICULTURAL AND RESOURCE GUIDELINES FOR THE CONSTRUCTION AND OPERATION OF THE INTERPROVINCIAL PIPE LINE LTD. PIPELINE IN ONTARIO.

#### Preamble:

These guidelines have been prepared to assist in the review of the Interprovincial Pipelines Ltd. application to construct a pipeline. They reflect the concern of the Province for the safety of its citizens and their property, for the protection of the environment and of natural and agricultural resources and for the interference with the development of industries, cities and municipalities, highways, etc., in the best interest of the Province.

#### PART I - Data Filed

1. The Applicant should prepare and prefile with the National Energy Board, Topographic Maps or air photo mosaics of 1:50,000 or larger scale containing all topographic information and showing:
  - i) route location
  - ii) pump station (s), tankage, and valve (s) location
  - iii) all important floral and faunal areas traversed by or adjacent to, the proposed route
  - iv) all recreation areas traversed by or adjacent to, the proposed route
  - v) the distribution of present land use for a corridor within the possible zone of influence on either side of the proposed pipe line location, using the following classification:
    - a) Agriculture, such as:
      - crops
      - dairying - mixed farming
      - grazing - livestock
      - poultry
      - orchards
    - b) Forest Resources, such as:
      - forests and woodlots
      - shelter and other protection belts
      - seed production stands
      - agreement forests
      - forest lands managed in conjunction with a public agency.

- c) Mineral Resources, such as:
  - existing and potential oil and gas pools
  - existing and potential pits and quarries
  - other known important mineral deposits
- d) Crown Reserves, Crown Lands, special agreement lands and lands owned or held by quasi public agencies, such as:
  - fish sanctuaries
  - wildlife management areas
  - provincial parks and reserves or national parks
  - ecological reserves
  - areas administered by Conservation Authorities
- e) Urban, such as:
  - residential
  - commercial
  - industrial
  - recreational and open space
  - institutional
- f) Municipal and Rural Water Supply, such as:
  - sources, e.g. reservoirs, watercourses, recharge areas
  - intake and discharge points.
- g) Sites, Areas, Buildings or Structures of Archeological, Historical or Architectural significance
- vi) the geographical distribution of existing and potential physical hazards and constraints such as, but not limited to, landslides, mudflows, avalanches, earthquakes, fire risks, slope stability, marshes and organic soils.

2. The Applicant should prefile with the National Energy Board:

- i) general construction methods and, methods of minimizing damage and rehabilitation of the right-of-way, including:
  - a) methods of maintaining slope stability;
  - b) methods of construction of permanent facilities in a way that will harmonize with their natural setting;
  - c) plans to carry out assisted revegetation or alternative methods of providing an insulative cover on which natural vegetation can occur;
  - d) the plant material to be used to re-establish vegetation;



- ii) the location of any new access roads to the right-of-way which will be cleared by the Applicant and any planned deviation or expansion of the right-of-way for work camps, storage, etc.
  - iii) the location of shallow wells in or near the right-of-way, particularly if trenching is deeper than 6 to 7 feet. In the event of water supply interference due to construction, the contractor is liable for the restoration of the supply.
  - v) schedule, detailing the proposed timing of construction.
  - vi) the proposed location of any other special design and construction features to minimize damage to sensitive areas.
3. The Company should detail how construction crews are to be educated as to the environmental and agricultural concerns of the Province and what precautions will be taken to ensure that the concerns are followed.

## PART II - Routing

### A. Forests

1. The routing should avoid cutting through seed production stands.
2. The routing should avoid cutting through Ministry of Natural Resources designated forest areas, e.g. defined parts of agreement forests.
3. The routing should follow wherever possible, the interface between woodlands and cleared lands.

### B. Wildlife

1. The habitat of rare or endangered species must not be disturbed.
2. The Applicant should avoid construction through present deer yards.
3. The Applicant should protect wetland areas used as feeding, breeding or staging areas by migratory water fowl or as a habitat for fur bearers.

### C. Watercourse Crossings

1. The pipeline right of way should be a minimum of 1,000 feet from the shoreline of any lake designated by the Ministry of Natural Resources.

2. Pipes should not be laid parallel to streams within a distance of 50 feet of the bank of the waterway. Within the "leave strip" between the right-of-way and the watercourse, trees and vegetation should be left in their natural condition.
3. The location of any watercourse crossings to be used by motorized vehicles (excluding boats) and the frequency of use, must be approved.
4. Such environmental analyses as the Applicant carried out should note species, spawning times and locations of spawning for each watercourse. Where possible, the Applicant shall avoid known fish spawning areas.

D. Notice to Landowners

The Applicant must ensure that the landowner has sufficient advance notice of the exact routing of the pipeline and the land required so that the landowner can assess the consequences of the pipeline construction before any request is tendered for the landowner's signature for an option, or agreement for right of way and easement, or temporary working rights.

E. Parks, Parks Reserves and Areas of Outdoor Recreation

1. No pipelines shall pass through any class of Provincial Park or Park Reserve, or Corresponding Park Zones without the approval of the Ministry of Natural Resources which may except:
  - (a) Access, Recreation or Development Zones of Recreation class parks;
  - (b) existing pipeline, hydro, or service rights-of-way can be used without further widening of the right-of-way or clearing or other undesirable disturbance or any land outside of the existing right-of-way.
2. Areas designated by the Province as having important natural, historical or archaeological value should be avoided.
3. Areas of important recreation potential should be avoided unless it can be proven to the Province to be feasible or seriously impractical to do so.

H. Minerals

Pits, quarries, mineral deposits including oil and gas fields and storage pools, are to be avoided, except where the applicant has reached an agreement with the Ministry of Natural Resources.

PART III - Construction

A. Scheduling

A finalized schedule of construction for each "spread" should be made available to interested parties after the National Energy Board Order has been issued and prior to the commencement of any construction.

B. Equipment Fueling

Refueling and maintenance should be carried out in approved areas and in such a manner as to avoid infiltration to the water table or runoff into watercourses.

C. Forests

1. When passing through woodlots or forests, a designated maximum slash width must be agreed to prior to commencing construction in that particular location.
2. Merchantable timber, removed in preparation of a right-of-way, must be cut in standard lengths and piled in locations from which it can be hauled readily unless other prior arrangements are made with the owner.
3. All slash material should be chipped and/or otherwise disposed of as agreed, unless it is agreed that burning is necessary.
4. If burning of slash is required, approval of Ministry of Environment must be obtained and where necessary, local authorities contacted and their compliance received.
5. Under the Forest Fires Prevention Act (Revised Statutes of Ontario) no burning may take place in the designated fire districts between April 1 and October 31 except under authority of a burning permit obtained from the Ministry of Natural Resources.

6. The procedures for the road clearing slash disposal and cutting of timber will be identical with those for the pipeline right-of way.
7. The Applicant will be required to obtain a work permit under the Forest Fires Prevention Act, Revised Statutes of Ontario, in the Fire Districts designated in this Act, south of latitude of 54° North from each Ministry of Natural Resources District concerned, for clearing of the right-of-way and construction of the pipeline.
8. Where Crown land is involved, no disposal of materials adjacent to the pipeline right-of-way will be permitted unless approved by the District Manager (Ministry of Natural Resources)

D. Wildlife

1. Present or potential high quality wildlife management areas should not be permanently interfered with by pipeline construction or operation.
2. For the protection of food supplies for wildlife the Ministry of Natural Resources may designate some areas of grasses, forbs and shrubs to be avoided by construction machinery or equipment storage.

E. Roads, Camps and Soil Replacement

1. When removing stumps during the right-of-way clearing, unnecessary removal of topsoil must be avoided to the satisfaction of the approved inspector.
2. During the backfilling and clean-up operations, the surface layer of soil must be replaced to the satisfaction of the approved inspector.
3. All debris resulting from the pipeline construction shall be disposed of by the Applicant to the satisfaction of the approved inspector or the landowner.
4. In the Ministry of Natural Resources' Fire Districts, the construction of all permanent and/or temporary roads and camps located off the right-of-way must be authorized south of latitude of 54° North by a separate work permit under the Forest Fires Prevention Act (Revised Statutes of Ontario) obtained from the District Manager. A land use or other tenure document under The Public Lands Act (Revised Statutes of Ontario) is required for all camps or improvements of Crown lands.

5. Any temporary access road, camp or storage area not required after construction is to be closed at the expense of the Applicant, unless otherwise agreed, and returned to a condition as specified.
6. The Applicant shall be responsible for all additional costs of reconstructing the pipeline to conform to the requirements for all present and future crossings which are on Crown or public lands being managed under agreement with the Province of Ontario. (1)
7. The Company must comply with the provisions of the Ontario Water Resources Act (Revised Statutes of Ontario) and/or the Environmental Protection Act (Revised Statutes of Ontario). with respect to disposal of gaseous, liquid and solid wastes produced as a result of construction operations.

F. Watercourse Crossing

1. An approved inspector must be informed of the particular schedule for each crossing and has the right to be on site for the construction across any watercourse or body of water.
2. The timing of the construction must be such that there will be minimal interference with water users and uses including fish migration or spawning or disruption of the incubation period of the eggs. Such environmental analyses that the Applicant carries out should note species, spawning times and locations of spawning for each watercourse.
3. Clean, approved, granular material must be available on-site prior to trenching and must be used to cover the pipe as soon as it is laid across the watercourse.
4. There shall be no blasting in or adjacent to watercourse beds during fish migration or spawning.
5. Wherever temporary weirs and/or coffer dams are required and constructed at watercrossings to form settling basins for the control of siltation, adequate stream flow must be provided to avoid interference with downstream water uses. Settling basins shall

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1. See Agreement by a Pipeline Company with a Timber Licensee under The Crown Timber Act, Section 10 of Grants of Easement - in respect of existing and future roads of a licensee.

be maintained and cleaned of silt, sand and debris as required to ensure complete control of construction siltation. In addition, these basins must be adequately protected to avoid hazard to persons.

6. Appropriate trench excavation methods must be employed to minimize materials from the pipe trench flowing into bodies of water, giving due consideration to the soil, terrain, ground cover, side slopes and weather conditions involved.
7. Gravel backfill must be avoided over long stretches of trench and perhaps restricted to excavation in the streambed itself, so as to avoid creation of an artificial drainage effect in the trench (French Drain).
8. Water to be used for testing or cleansing of the pipeline must come under the control of a permit to take water as issued by the Ministry of the Environment. This permit will detail the Permittee's responsibility for restoration of water supplies interfered with by the testing. Proposed sources which are limited in capacity or already used extensively may not be permitted for such purposes.
9. The banks of the watercourse must be stabilized upon completion of the construction to avoid erosion.
10. Final stream channel clean-up must include removal of any temporary structures, reshaping of the stream to an approved configuration, width and depth; protection of stream banks as described above; and removal of all construction material and debris as required.
11. Works relating to construction operations should be timed to avoid designated recreational lakes or rivers during peak use periods.
12. Where necessary, herring-bone berms should be used along the route of excavation to direct surface run-off away from newly consolidated areas.

13. Removal of vegetation from the slope approaches to the watercourse must be kept to the minimum necessary for construction. Areas cleared of vegetation must be revegetated as soon as seasonal conditions permit but must be stabilized during the post backfilling, pre-vegetation, period.
14. To minimize silt input into a watercourse which is to be crossed by the pipeline, the cutting of the trench at the bank of the watercourse must not be undertaken until the actual pipe-laying is to take place.
15. The trench and trench site drainage must be discharged to settling areas.
16. Aquatic plants uprooted or cut prior to, or during trenching operations must be contained and deposited on land.
17. To avoid disruption of the bed and the deposition of grease or oil in water, vehicles must not travel along the bed of a watercourse.
18. The Applicant must ensure that the pipeline is adequately weighted.
19. All pipelines, either underwater or located in areas subject to flooding, must be buried below the maximum anticipated depth of scour.

G. Agricultural Lands

1. Adequate notice of the schedule of the movement of materials and/or construction and normal maintenance and repairs should be given to the landowner and/or occupant.
2. The use of herbicides and pesticides must be co-ordinated with the landowner and/or occupant.
3. Where requested the Applicant must remove and stockpile the topsoil before trenching begins. Excess excavated material, stones, construction debris, trees and brush must be disposed of in a manner compatible with the existing land use. Where removed the topsoil must be replaced and, with the exception of land currently under cultivation, must be reseeded in a manner compatible with the soils and existing land use.



4. Construction scheduling and the selection of construction equipment and techniques which will reduce compaction should be used wherever possible. The Applicant shall be responsible for relieving compaction through the use of chisel plowing or other techniques such as selective cropping.
5. The Applicant shall be responsible for maintaining the surface contour as necessitated by settlement in subsequent years.
6. In order to minimize damage, provision should be made for surface and subsurface drainage during the construction period.
7. In determining the depth of the pipe, avoidance of present drainage and facilitation of the installation of future drainage should be taken into consideration. Depths should be noted on the formal agreement.
8. During construction the Applicant must repair and/or replace tile drainage to the satisfaction of the approved inspector. All open drains/ditches must be properly repaired utilizing appropriate soil stabilization procedures.
9. The Applicant shall be responsible for all increased costs occasioned by the location of the pipeline whenever future crossings for drains under The Drainage Act (Revised Statutes of Ontario) or private agricultural drainage works are necessary.
10. The Applicant will repair any tile drainage damaged or disrupted by construction procedures or operations connected with the pipeline as long as the pipeline is in place.
11. Point (s) of entry upon the property and access route (s) from the point of entry to the right of way and easement or temporary work area to be used during construction and normal maintenance and repair should be selected in consultation with the landowner. Repair and maintenance of the access routes during and upon completion of construction and normal maintenance and repair shall be the responsibility of the Applicant.
12. Where requested an access route must be available to the landowner to pass from one side of the right of way and easement or temporary work area during all phases of



construction so as not to inhibit normal movement of equipment or animals.

13. The Applicant should repair or replace all fences opened, removed or damaged. The Applicant should be responsible for damages to animals or property due to inadequate temporary fencing or improper repair or replacement of fencing.
14. Subject to the requirement of the Board Order with respect to the mandatory placement of markers, marker location (s) should be selected in consultation with the landowner.

H. Mineral Resources

Subject to the National Energy Board, the owner or lessee of the mines or minerals, including oil or other hydrocarbons, lying in, on or under the right-of-way may work and prospect for wells, mines or minerals.

I. Parks, Park Reserves and Areas of Outdoor Recreation

1. The Applicant constructing the pipeline should have contingency plans, approved by the Province, to deal at the earliest possible time with the discovery of natural, historical, or archaeological sites of significance during construction.
2. Subject to the requirements of the Board, pipeline markers, and any other visible features, should be located in Parks and Park Reserves with consultation with the Province.

PART IV -Operation, Maintenance and Contingency Planning  
Procedures

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1. Before conducting any herbicide spraying project to retard vegetation on the right-of-way, the pipeline company should advise the District Manager (Ministry of Natural Resources) and/or the landowner stating the specific location of the project, that the application will be handled by license handlers, the type of chemical to be used and the method of application.

2. The District Manager (Ministry of Natural Resources) must be informed in advance of the actual spraying operation and, at his discretion, may monitor all section spraying.
3. Any use of pesticides must comply with the Pesticides Control Act (Revised Statutes of Ontario) as administered by the Ministry of the Environment.
4. An adequate screening program must be maintained so that any above ground structures, such as pump stations or valving, will be aesthetically harmonious with the local environment.
5. Adequate noise attenuation features must be used and maintained.
6. Before carrying out any pipeline cleaning operations which result in waste material requiring disposal, the company must apply for and receive written approval of the Ministry of the Environment.
7. As provided in the Energy Act (Revised Statutes of Ontario), the Applicant must prepare, prior to operation, a procedure to be followed regularly for surveying the pipeline route by air and land for early detection of leaks and right-of-way maintenance.
8. The Applicant must maintain any access roads necessary to the security of the pipeline.
9. Herbicide spraying after construction will be kept to a minimum. Planting of appropriate herbaceous shrubs may be advised by the Ministry of Natural Resources as an alternative method of right-of-way maintenance.
10. The surface of rights-of-way through Crown Parks and special agreement lands shall be managed by the Province according to the guidelines established for the zone or zones through which it passes subject to any safety requirements and regulations in this regard.
11. A comprehensive contingency plan and notice of spills as generally provided for under the Ontario Water Resources Act, Environment Protection Act and the Energy Act (all Revised Statutes of Ontario) should be prepared by the pipeline company and submitted to all relative Government Agencies. The plan should demonstrate the companies' willingness, ability and preparedness to monitor the throughput and to contain, clean-up and restore the

environment after any sort of spill or line break has occurred. In general, the plan should also show the responses to various anticipated problems or disasters and the reactive procedures and materials to meet these occurrences.

It is advised that the plan be updated as frequently as necessary and in general follow the following outline:

- (i) Contact list - to include company and government personnel to be contacted in case of spill.
- (ii) Response Plan (s) - a review of what reactions are taken upon the discovery of a spill or line break. It should include the order of telephoning and who is responsible for contacting whom.
- (iii) Equipment List - a listing of the company's own resources and additional contractors available along the pipeline route.

APPENDIX B

MINISTRY OF ENERGY

PROVINCE OF ONTARIO

SUBMISSION TO NATIONAL ENERGY BOARD

RE MONTREAL PIPELINE EXTENSION

TERMS AND CONDITIONS OF EASEMENTS

RIGHTS OF WAY, AND TEMPORARY WORKING RIGHTS

To help ensure that the interests of the Province and of the people of Ontario are properly safeguarded, the Province will request the National Energy Board to order that the following terms and conditions be made a condition of the Board Order.

A. As regards new agreements with landowners and municipalities

The following matters should be raised by the Applicant's agent with the landowner and where necessary the conditions agreed should be noted on the agreement.

1. The Applicant will have the right to construct one line of pipe only.
2. No agreement shall be legally binding unless at the time of signing the precise location of the pipeline easement/ right of way/temporary working rights over the property concerned is attached thereto and at the same time the landowner is notified of the approximate time of construction.
3. (i) The Applicant shall cut and place on the property all timber or trees of any value which are removed in the clearing of that property.  
(ii) The Applicant shall:
  - (a) repair or replace all fences opened, removed or damaged.
  - (b) be responsible for damages to animals or property due to inadequate temporary fencing or improper repair or replacement of fencing.

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3. (ii) (c) provide compensation for any damage occasioned by the construction or presence of the pipeline and for any damage caused by its servants or agents or those of its contractors whether done in the course of their employment or otherwise.
- (iii) The Applicant shall dispose of excess excavated material, stones, construction debris (e.g, welding rod stubs) trees and brush;
- (iv) The Applicant undertakes at its own expense to restore the land to its original condition as far as possible and where necessary re-attend for that purpose, including:
- (a) proper tamping where drainage ditches etc. have been crossed,
  - (b) repair of slopes where erosion may occur,
  - (c) maintenance of surface contour,
  - (d) relief of the compaction of the land by means for chisel ploughing or selective cropping where requested by the landowner.
- (v) The Applicant will at the request of the landowner remove and replace topsoil.
- (vi) The Applicant undertakes to compensate the landowner for crop loss or other damage done during the construction year and crop loss in subsequent years due to impaired productivity.
- (vii) The Applicant will remove from the property (unless otherwise disposed of in a manner satisfactory to the landowner) clay or other materials removed in boring under roadways or other crossings.
- (viii) The Applicant shall where required provide for surface and subsurface drainage during construction and shall promptly and systematically repair all tile drains to their previous condition where such tile drains are broken or otherwise disturbed in the course of the pipeline construction, using cement pads, bagging and/or carrier pipe for drain tiles and crossings in accordance with customary good drainage construction practices. Tile ends shall not be left open overnight. Tiles which are broken by construction or machinery operation in other than the pipeline ditch itself shall also be replaced.

MINISTRY OF ENERGY

4. The Applicant undertakes that it will at its own expense, take such steps as may be necessary to ensure that its pipeline does not interfere with any existing, future planned or unplanned municipal drainage systems nor with existing or future private drainage systems.

In areas where drainage ditches and tile drainage are important to the conservation and production of agricultural lands the Applicant undertakes to provide:

- (i) a minimum of four feet of cover over the said sections of pipe line at existing improved drainage ditches; and
- (ii) deeper cover, to be agreed with municipal authorities in the circumstances of each case, over the said sections of pipe line at existing unimproved drainage ditches, respectively.

Where such matters have been part of the discussions between the landowner and the Applicant leading to the granting of the easement/right of way, the proposed depth of the pipe line should be noted in the agreement.

5. (i) The Applicant shall, after consultation with the landowner designate point(s) of entry upon the property and access route(s) from the point of entry to the right of way/easement/temporary work area to be used during construction and normal maintenance and repair.
- (ii) Repair and maintenance of the access route(s) during and upon completion of construction and normal maintenance and repair shall be the responsibility of the Applicant.
- (iii) An access route across the right-of-way/easement/temporary work area shall be provided where requested by the landowner.
6. Subject to the requirements of the Board Order, the locations of markers should be selected in consultation with the landowner and with particular reference to drainage tile, telephone cables, etc.

MINISTRY OF ENERGY

B. As regards agreement with the Province or with Public Authorities such as Municipalities, Conservation Authorities, Crown Lands, Recreational Areas, Parks, etc.

1. Unless otherwise agreed, where Her Majesty the Queen in right of Ontario or any agency thereof or any public authority constructs or causes to be constructed on Her or its behalf any tunnel, dam, highway, private road, railway, irrigation ditch, drain, drainage ditch, sewer telegraph or telephone line or a line for the transmission of hydrocarbons, power or any other substance, the Applicant will bear all costs incurred by Her Majesty the Queen in right of Ontario or the respective agency or public authority in connection with any application to the National Energy Board which may be required by law, any costs incurred by them for reinforcing a pipe line by the installation of protective devices or otherwise and any additional costs of construction occasioned by reason of the existence of the pipe line or pipe lines.

2. The Applicant shall cause at its own expense the restoration and repair of, or otherwise take such action as may be necessary to mitigate such adverse environmental effects arising from the construction, operation and maintenance of the additional pipeline, herein referred to, as may be ordered or direct from time to time by the Board.

3. The Applicant shall file with the Board and with the Province, its proposals to safeguard the environmental integrity of critical areas along the route such as:

- (i) the crossings of rivers and creeks, the revegetation and stabilization of its banks, etc.,
- (ii) the protection of fisheries, spawning beds, etc.,
- (iii) the protection of parks and recreational areas.

These proposals should include special construction techniques and design features where justified such as:

- (i) provision of block valves and their remote control, or thicker wall pipe or special grade steel or concrete or other protection against damage, and
- (ii) line patrol or other methods of leak detection.

## APPENDIX C.

### SOME PARTICULAR SENSITIVE AREAS: SARNIA TO MONTREAL

#### CRUDE OIL PIPELINE

The following listing represents a summary of environmentally sensitive areas as identified by the International Biological Program, or as outlined by the Ministry of Natural Resources and Provincial Parks or Park Reserves (also identified through the Ministry of Natural Resources). The listing is not considered to be complete and will be added to as more data becomes available. The various points noted run in order commencing from Sarnia.

- (1) Mandaumin Nature Reserve
- (2) Ausable River Valley Complex
- (3) Thames River north of London
- (4) South Branch of the Thames River north of Woodstock
- (5) Brooksdale Forest
- (6) East Zorra Trail
- (7) Grand River
- (8) Dickson Wilderness Area Sand Ridge
- (9) Bannister and Wrigley Lakes
- (10) Cranberry Bog Nature Preserve
- (11) Pinehurst Lake Conservation Area Sand Ridges
- (12) Oliver's Bog
- (13) Beverly Swamp
- (14) Spencer Creek
- (15) Bronte Creek Provincial Park
- (16) Credit River
- (17) Duffin Creek
- (18) East Duffin Creek
- (19) Shoal Point Marsh
- (20) Levay's Marsh



- (21) Ontario Hospital Marsh
- (22) Thickson's Marsh
- (23) Oshawa Creek
- (24) Harmony Creek
- (25) Oshawa Second Marsh
- (26) Bowmanville Marsh and Creek
- (27) Newcastle Marsh and Wilmot Creek
- (28) Graham Creek
- (29) Willow Beach Marsh
- (30) Ganaraska River
- (31) Cold Creek Forest
- (32) Shelter Valley Creek
- (33) Pine-Oak Forest-Haldimond Township
- (34) Drewery Hill Swamp
- (35) Trillium Patch - Haldimand Township
- (36) Cramahe Hill Wildlife Area - Lower Trent Conservation Authority
- (37) Johnstown Drumlin Forest
- (38) Pancake Hill Slope Forest
- (39) Thurlow Wildlife Area - Thurlow Township
- (40) Salmon River Alvar
- (41) Thorpe-Alvar
- (42) Asselstine Alvar - Ernestown Township-Botanical
- (43) Caseys Point Park Reserve
- (44) Bell's Swamp-Kingston Township-botanical & Zoological
- (45) Gananoque National Park & Wildlife Area-Front of Leed St.  
Lansdowne-Township
- (46) Fitzsimmons Mountain
- (47) Blue Mountain Park Reserve
- (48) Buells Creek Marsh

- (49) Long Sault
- (50) Cornwall Recreation Area-Cornwall Township
- (51) Charlottenburgh Crown Game Preserve-Charlottenburgh Township

\*Data assembled with assistance from Parks Planning Branch,  
Ministry of Natural Resources

Ministry of the Environment  
February 19th, 1974.

APPENDIX B

BECHTEL CANADA LTD., 'SPECIFICATIONS MANUAL, PART VI,  
ENVIRONMENTAL CONSIDERATIONS AND RESTORATIONS', MAY 1975.

PART 6

ENVIRONMENTAL CONSIDERATIONS AND RESTORATIONS

PART 6  
ENVIRONMENTAL CONSIDERATIONS  
AND RESTORATION

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EC-1 OBJECTIVES

CONTRACTOR shall carry out all work under this CONTRACT in such a manner as to cause the least possible disturbance or damage to the environment. In cases where some temporary disturbance or damage is unavoidably caused due to the nature of the Construction work, CONTRACTOR shall, as soon as possible, remove the cause of such temporary disturbance, repair the damage and in general restore the affected areas to their original condition to the extent possible.

CONTRACTOR shall be responsible to abide by all governmental rules and regulations applicable to interprovincial pipelines concerning environmental protection and obtain all necessary permits required under such rules and regulations unless specifically stated otherwise elsewhere in this CONTRACT.

The following are the basic objectives of these specifications:-

a) General

- Controlling erosion during and after construction.
- Minimizing disturbance to the flora and fauna of the area during construction and restoration of the affected areas so as to avoid all permanent effects to the extent possible.

- Prevention of permanent changes in the surface and ground water courses.
- Minimizing introduction of pollutants into the environment during construction activities.

b) Farming Areas

- Minimizing disturbance to agricultural activities during construction, and restoration of the land on completion of construction in such a manner that the land can be returned to production in the shortest possible time.
- Restoration of surface and subsurface drainage.

c) Forests and Recreation Areas

- Minimizing disturbance to the forest cover, wildlife and recreation activities during construction and restoration of the areas to the original condition to the extent possible after construction.

d) Water Courses Including Approaches and Banks

- Minimizing removal of stream side vegetation and habitats during construction and re-establishment of vegetative cover on completion of work.
- Prevention of permanent changes in the water courses and morphology.

- Protection of and avoiding disturbance to the fish and wildlife species dependent on the stream.
- Avoiding interference with downstream water users.

e) Urban Areas

- Minimizing disturbance to the inhabitants due to construction activities.

The following Environmental Considerations state the MINIMUM precautions, mitigative measures and actions which CONTRACTOR shall carry out to achieve these objectives.

CONTRACTOR shall include all costs associated with compliance with the following articles in its Bid under Item A of Schedule of Unit Prices unless specifically stated otherwise in the respective articles.

MANAGER reserves the right to modify these specifications or issue new specifications if required, in MANAGER'S judgement, to protect the environment. CONTRACTOR shall be responsible to promptly comply. In the event such compliance warrants adjustment of compensation to CONTRACTOR, the adjustment will be made in accordance with the terms of the CONTRACT.



EC-2 CLEARING, GRUBBING AND GRADING

a) Clearing

CONTRACTOR shall not use any herbicides or pesticides on the Construction Right-of-Way or temporary work areas except in those areas where landowner has specifically requested such treatment. In such cases CONTRACTOR shall obtain necessary clearances from the appropriate governmental agency(s). When such chemicals are used CONTRACTOR will ensure that said chemicals are properly stored, handled and applied. Care shall be exercised in application of said chemicals to minimize over-spray, wind drift and contamination of non-designated areas. If surplus chemical exists following use and disposal is deemed necessary, CONTRACTOR will dispose of the chemical in a lawful manner in accordance with all applicable rules and regulations.

Only those trees which interfere with construction or safe operation of the pipeline shall be removed. Areas where a maximum slash width has been specified by landowner are found in the "Line List". When stumps are not to be grubbed, the height of the stump shall not exceed six (6) inches, and the branches on stumps of all coniferous species shall be removed.

Where low-growing trees and shrubs exist on the Construction Right-of-Way, every attempt shall be made to leave as many as possible in an undamaged state.

Branches or limbs of trees which may be damaged by construction equipment must be adequately pruned.

Where specified by landowner, the wound on the living tree exposed by pruning shall be dressed with an accepted compound.

All merchantable timber or other timber as noted in the "Line List" shall be trimmed and cut into commercial or designated lengths and stacked along the edge of the Construction Right-of-Way unless otherwise noted in the "Line List"; however, timber shall not be stacked on restricted width Construction Right-of-Way. What is merchantable timber will be defined by the party or government agency owning the timber or holding the timber rights. CONTRACTOR shall have the right to use timber cut from the Construction Right-of-Way unless otherwise noted in the "Line List".

CONTRACTOR'S attention is drawn to EC-11 for additional considerations that may be applicable.

b) Grubbing

Grubbing of all roots, stumps and partially embedded

rocks or boulders shall be performed in a manner so as to disturb the minimum amount of area and topsoil. Wherever stumps, roots or partially embedded rocks or boulders have been grubbed and a depression has been left in the ground, CONTRACTOR shall backfill the depression and compact it to prevent water from collecting in it and forming a boghole.

All non-usable timber and slash, brush undergrowth stumps, roots and partially embedded rocks or boulders cut or removed from the Construction Right-of-Way shall be disposed of in a manner and method satisfactory to the landowner, or tenant, or governmental agency concerned and MANAGER. This shall be done as soon as practicable after the initial removal and in no case shall it be left to interfere with the grading and laying operations.

If CONTRACTOR arranges with the landowner or tenant for the use of timber, slash and brush for use as rip-rap in swamps and wet areas, this rip-

rap shall be removed from the Construction Right-of-Way upon completion of the construction if required by the landowner, the tenant or MANAGER.

CONTRACTOR'S attention is drawn to EC-11 for additional considerations that may be applicable.

c) Grading

Prior to instituting any grading operation in arable, sodded or agricultural areas of the Right-of-Way, CONTRACTOR shall strip the topsoil from a 10 foot wide area over the centerline of the ditch in areas noted on "Line List". Topsoil stripping shall be carried out as per Drawing SK-70 or as noted in "Line Lists". Such topsoil removal shall be to its actual depth as designated by MANAGER, but in any event to a maximum depth of twelve (12) inches.

Uncovering live tree roots must be kept to the minimum practicable.

When CONTRACTOR cuts terraces or dams, it shall completely restore them to their original condition within a minimum time.

When CONTRACTOR installs a diversion dam, it shall remove same and restore the land to its original condition within a minimum time.

In cutting or installing dams, CONTRACTOR shall not flood adjoining lands, unless CONTRACTOR has made prior arrangements with the landowner/tenant.

Where necessary CONTRACTOR shall stabilize steep banks to prevent undue erosion.

All grading shall be finished to maintain the original drainage or water flow patterns as nearly as practicable and shall conform to the regulations of the governmental agency having jurisdiction over the same.

CONTRACTOR shall do all necessary grading at road, river stream and gully crossings and at other locations where needed, to permit the passage of its equipment, bridging such areas and small streams so as not to interfere with the flow therein or unduly damage the banks thereof.

CONTRACTOR shall institute erosion control measures as necessary to prevent washouts and siltation of these water courses.

No public ditches or drains shall be filled or bridged for passage of equipment or vehicles until CONTRACTOR has secured approval of the governmental agency having jurisdiction over same.

In the event sites of unique historical or archaeological significance are exposed, CONTRACTOR shall immediately stop work and notify MANAGER of the find and will abide strictly by MANAGER'S directions. In the event that the site must be by-passed, the extra work involved in returning to the location shall be negotiated as an extra cost.

Where the Construction Right-of-Way is adjacent to or in the proximity of homes, gardens, yards, other urban green-space, and parks or recreation areas, CONTRACTOR shall construct a barrier or drainage ditch such that soil or other excavated materials will not be carried by run-off water from the Right-of-Way onto said properties. CONTRACTOR'S attention is drawn to Article GC-35 of the General Conditions.

CONTRACTOR'S attention is drawn to EC-11 for additional considerations that may be applicable.

Compensation for work performed under this article shall be part of Item A of Schedule of Unit Prices.

EC-3 TRENCHING

The spoil bank from trenching shall not be allowed to fall on any loose debris or foreign matter that might become mixed with the soil excavated from the trench.

Spoil banks shall not be permitted to cover or lie against living trees.

Where the trench traverses a wetland area, and where the existence of the trench may drain the wetland, impermeable barriers shall be constructed on each side of the wetland to prevent continuous drainage and upsetting of the wetland's water balance in the future. CONTRACTOR will be paid for such impermeable barriers as extra work.

Where blasting is necessary CONTRACTOR shall make every effort to minimize the noise levels in accordance with existing local regulations and shall schedule blasting operations to minimize disturbance to the local population. CONTRACTOR shall have at its disposal a knowledgeable blasting consultant acceptable to MANAGER to assist CONTRACTOR in the conduct of its blasting operations whenever necessary.

Long lengths of open trench can turn into turbulent water courses during severe rain storms and cause severe erosion

of the trench and adjacent areas. Where slope and terrain conditions dictate, discontinuity in the trench can be provided by earth plugs, adequate sack breakers or other appropriate means in the trench. Where such measures are taken, diversion berms or ditches shall be constructed in conjunction to prevent overflow of water from one section of the trench to another. In addition to the above trenching shall not precede pipe laying by more than three days except in areas of rock trenching where CONTRACTOR shall maintain the minimum amount of open ditch practicable. In the event there are exceptional cases where these limits cannot be adhered to for any reason, CONTRACTOR shall bring each case to MANAGER'S notice and shall abide by MANAGER'S directions.

In the event that sites of historical or archaeological significance are exposed during trenching, CONTRACTOR shall immediately stop work and notify MANAGER of the find and abide strictly by MANAGER'S directions. In the event that the site must be by-passed, the extra work involved in returning to the location shall be negotiated as an extra cost.

Where the Construction Right-of-Way is adjacent to or in the proximity of homes, gardens, yards, other urban



green space, and parks or recreation areas, CONTRACTOR shall construct a barrier or drainage ditch such that soil and other excavated materials will not be carried by run-off water from the Right-of-Way onto said properties. CONTRACTOR'S attention is drawn to Article GC-35 of the General Conditions.

CONTRACTOR'S attention is drawn to EC-11 for additional considerations as may be applicable to it's trenching operation.

CONTRACTOR'S attention is drawn to EC-6 (Drainage Tile) for such articles as affect the trenching operation.

EC-4 BACKFILLING

Backfill used in wetlands shall consist of the native soils, unless otherwise specified in writing by landowner or MANAGER.

Backfilling shall not lag more than one (1) working day behind lowering in of the pipe. In exceptional cases where this cannot be achieved, CONTRACTOR shall abide by MANAGER'S directions.

Where the trench is backfilled with pervious material, whether obtained from the excavation or brought from outside, the backfilled trench may establish an alternate seepage route for groundwater thereby disturbing the natural subsoil drainage characteristics of the area. To prevent this, CONTRACTOR shall provide impermeable barriers in the backfilled trench at appropriate intervals. The locations and spacing of these impermeable barriers will be determined by MANAGER during construction and CONTRACTOR will be compensated for these barriers as extra work.

CONTRACTOR shall exercise care during backfilling to avoid injury to living trees in the proximity of the soil banks by backfilling equipment. Where topsoil has been stripped, and stockpiled, CONTRACTOR shall replace the topsoil over the stripped area as the final backfilling operation.

EC-5 CLEAN-UP AND RESTORATION

a) Clean-Up

CONTRACTOR shall clean-up the Construction Right-of-Way and dispose of all waste materials, debris, surplus subsoil and rock resulting from its operations. Disposal shall be in an approved manner and at sites approved by authorities having jurisdiction. CONTRACTOR shall be responsible to obtain all necessary approvals.

Where specified in writing by the landowner, excess subsoil shall be removed from the Construction Right-of-Way and disposed of. In such cases where disposal requires hauling to a designated area, CONTRACTOR will be paid on a unit basis for hauling.

Where Crown Land is involved, no disposal of materials will be permitted adjacent to the Construction Right-of-Way unless prior approval is first obtained from the appropriate government authorities.

Open burning of waste materials must be approved by the appropriate government authorities.

CONTRACTOR shall fill and level holes and ruts, replace the topsoil, remove temporary culverts and ditches and otherwise restore the ground to a suitable and usable condition consistent with the condition of

the ground prior to the commencement of WORK to the satisfaction of MANAGER.

CONTRACTOR shall remove from the Right-of-Way all equipment, tools and appliances which were used by it in the performance of the WORK. During the course of construction, CONTRACTOR shall at its own expense transport all unused and surplus materials such as pipe, coating and wrapping materials, etc., that are located along the Construction Right-of-Way and at MANAGER designated unloading points, to locations where the actual construction WORK is in progress. Material that cannot be used on the WORK shall be transported to storage yards designated by MANAGER.

CONTRACTOR will remove rip-rap or other temporary roadbed materials from surface of the Construction Right-of-Way unless the landowner specifies otherwise in writing.

b) Restoration

CONTRACTOR shall relieve soil compaction along the Construction Right-of-Way through the use of chisel plowing, discing and/or other appropriate means after clean-up is completed.

Where the pipeline has crossed lawns, yards, and driveways, the lawns shall be resodded and shrubbery replaced and yards and driveways shall be finished to the satisfaction of the landowner and MANAGER.

CONTRACTOR shall be responsible to restore the right-of-way to the condition existing prior to commencement of construction or better. The original ground contours and the natural drainage patterns disturbed by Construction shall be restored. Embankments cut during the construction shall be rebuilt to their original profile and stabilized to prevent erosion.

Damage to land adjacent to the Right-of-Way resulting from CONTRACTOR'S machinery or other activities shall be considered as "Off Right-of-Way" damage and shall be restored by CONTRACTOR at no additional cost in accordance with Article GC-35 of the General Conditions.

Where specified in the "Line Lists", the Right-of-Way shall be reseeded with grasses or legumes appropriate to the area. Where designated, the costs of trees used for replanting will be negotiated by CONTRACTOR and MANAGER.

Where potholes, marshes, or other wetland areas have been drained to facilitate construction, these sites will be restored to the original condition to the extent practicable.

Upon completion of all backfilling, cleaning-up, chisel plowing and discing of the Construction Right-of-Way CONTRACTOR shall make permanent repairs to the fences and/or other enclosures where it has made temporary gates or has damaged during construction. New and like material shall be used in making these repairs. Structures shall be placed in a condition as good as, or better than, at the beginning of the construction. All fence repairs shall be satisfactory to MANAGER.

CONTRACTOR shall remove all temporary means of access to the Right-of-Way which it may have installed. In addition CONTRACTOR shall paint designated posts on OWNER'S Right-of-Way to OWNER'S color specifications.

When railway sidings and storage areas used by OWNER for the unloading of pipe and other OWNER'S material and/or for their stockpiling or storage, are no longer required CONTRACTOR shall:

- i) Clean-up the said railway sidings and areas and dispose of all waste ma-

terial and empty containers as directed by  
MANAGER.

- ii) If so requested by MANAGER and at the OWNER'S expense, transport all surplus pipe and other surplus OWNER'S material from sidings and storage areas to permanent locations designated by MANAGER.

If seasonal conditions prevent completion of restoration work, CONTRACTOR shall carry out all necessary work to temporarily stabilize the area, complete clean-up to the extent possible and return as soon as weather conditions permit to complete the clean-up and restoration work.

CONTRACTOR shall not use pesticides or herbicides during clean-up or restoration operations unless specifically requested by landowner. In such cases CONTRACTOR is responsible for obtaining all necessary clearances from appropriate government agencies. CONTRACTOR'S attention is drawn to EC-2 for cautions regarding use and disposal of such chemicals.

MANAGER shall obtain from landowner and/or tenant "Clean-Up Approvals" to the effect that properties have been restored to the satisfaction of landowner and/or tenant.

EC-6 DRAINAGE TILES

a) Location and Flagging

CONTRACTOR shall be responsible to locate and flag all drainage tiles which cross the Right-of-Way. CONTRACTOR may be assisted by MANAGER and/or land-owners as to approximate locations of the drainage tiles but this does not absolve CONTRACTOR from any responsibility for locating and flagging all drainage tile crossings.

Immediately after the trenching operation, the cut ends of each drain shall be carefully cleaned and plugged with burlap and their location shall be flagged. Flagging each drain, cut during trenching operations, will be accomplished with blue survey tape fastened to survey lathe driven securely into the ground. The flag or flags (as deemed necessary by MANAGER) will be placed in such a position as to be clearly seen, yet, out of the way of construction activities so that the flags are not knocked down and/or removed prior to final inspection.

In certain locations MANAGER may prohibit CONTRACTOR from cutting the drainage tiles. Such locations will be flagged in red by MANAGER and CONTRACTOR shall



adopt special construction methods such as hand excavation in these locations to ensure that the existing drain tiles are not damaged.

b) Co-ordination of Activities

CONTRACTOR shall comply with all directives of MANAGER and shall be responsible to notify MANAGER of the location and size of all drainage tiles encountered in the course of construction activities.

CONTRACTOR shall carry out the work to the satisfaction of MANAGER, the landowner and other concerned agencies (NEB, etc.).

c) Subcontracting of Tile Repair

CONTRACTOR may elect to subcontract the repair and installation portion of this work to a competent, reliable and experienced firm which is familiar with the drainage characteristics of the work area.

CONTRACTOR shall obtain MANAGER'S written approval prior to subcontracting the work.

d) Purpose and End Requirements

Drainage tiles, as installed by the landowner, are placed to provide drainage in soils that otherwise

are slow to or will not drain.

It is, therefore, of utmost importance that drainage systems so employed are not damaged or subject to any blockage. Where approved by MANAGER, a system of headers will be employed for the purpose of collecting water in the undisturbed portion of the upstream side of the right-of-way. In order to minimize the number of crossings of the pipeline ditch, several submain drains will be installed to transport water across the trench. The number of submain drains employed will depend upon field investigation and will be determined by MANAGER.

e) Supply of Materials

CONTRACTOR shall be responsible for the supply and delivery of all materials necessary for the complete repair of drainage tile.

The repair pipe shall be perforated, corrugated, galvanized, asphalt coated, 16 gauge steel pipe (Armco's "Hel-Cor" or equal) and will be fitted to field tiles in relation to respective diameters as per the following chart or to the size specified by the landowner in writing.

<u>Tile Size</u>	<u>Corrugated Pipe Size</u>
4"	6"
6"	8"
8"	10"
10"	12"
12"	15"
16"	18"

The pipe shall be of sufficient length to span the trench and provide three feet of support on either side of the trench in undisturbed soils.

The ends of the pipe shall rest on standard concrete blocks (8" x 8" x 16") laid beneath the repair pipe to provide support and stability to the pipe.

f) Repair Procedures

After the right-of-way traffic has ceased, CONTRACTOR shall carry out permanent repairs and replacement of drain tiles in accordance with drawing SK-65 to the satisfaction of MANAGER and landowner.

The corrugated repair pipe shall be laid so as to permit the unobstructed drainage of the tile drain system. The corrugated pipe shall be placed so that the former gradient and alignment is maintained.

CONTRACTOR shall be responsible to locate, uncover,

examine and repair all drainage tiles damaged in the right-of-way travelled over by its heavy equipment. In order to locate the damaged tiles, CONTRACTOR shall "snake" the entire length of drainage tiles encountered for at least the width of the Right-of-Way.

g) Backfill and Compaction

Repairs to the drain tile system shall be initiated after the line backfill has been completed. The tile trench shall be excavated through the backfill and into the stable soil on either side of the buried pipe. After the installation of the corrugated pipe and concrete support block, the trench shall be carefully backfilled using a hand-held vibratory packer.

h) Landowner's Inspection

The landowner has a right to inspect the repairs at all stages to satisfy himself on the integrity of the repaired system. CONTRACTOR shall provide access to the landowner at all times, and shall co-ordinate with MANAGER on all issues arising out of such inspection.

i) Final Inspection and Approval

The flags marking the location of drainage tile re-

pairs shall not be removed until such time as MANAGER has given a final approval to the repairs. This approval does not absolve CONTRACTOR from the responsibility of making future repairs if defects are located.

j) Special Problems

Where header problems exist or where problems arise from tiles running parallel to the pipeline, these will be treated as special cases where CONTRACTOR and MANAGER will negotiate equitable prices based upon the prices of Unit Price Schedule.

EC-7 ACCESS ROADS AND WAREHOUSE AREAS

CONTRACTOR shall identify the proposed locations of access roads and warehouse areas prior to commencement of construction activities and these must be approved by MANAGER. Every effort shall be made to use existing roads rather than establishing new ones.

Access roads shall be located such that, wherever possible, they do not provide a view down the right-of-way.

Warehouse areas shall be located such that disturbance to local residents is minimized.

Access roads shall be maintained during use to prevent erosion problems through appropriate means such as ditching, culverts, use of rip-rap, etc.

Unless otherwise specified, temporary access roads, camps and warehouse areas not required after construction ceases in the area shall be closed immediately and reconditioned to a pre-construction state to the extent possible.

CONTRACTOR shall obtain all necessary work permits, land use or other tenure documents, etc. as required by applicable governmental authorities for construction of construction roads, camps, storage yards or other facilities off the Right-of-Way.

EC-8 FUELING AND VEHICLE MAINTENANCE

Where CONTRACTOR establishes major bulk fuel and oil storage, or vehicle maintenance yards, such areas must be approved by the pertinent jurisdictional authorities. CONTRACTOR shall inform MANAGER of the locations of all such areas. These areas shall be located and developed so as to avoid infiltration of fuels or oils to the groundwater table and run-off into surface water courses. Bulk fuel and oil storage devices must be diked with sufficient enclosed volume to hold the tanked contents plus a margin of 20% and shall be isolated from water courses.

Adequate fire prevention measures must be provided at bulk fuel and oil storage areas and vehicle maintenance yards. The measures must comply with the regulations established by pertinent jurisdictional authorities. Such fire prevention measures as are appropriate shall also be taken in regard to fueling services used on the Construction Right-of-Way.

Where CONTRACTOR'S machinery is serviced on the Construction Right-of-Way, oil and lubricants used will be properly confined in containers. In the event that oil or lubricants are spilled on the surface of the ground, the topsoil so affected will be dug up and removed, and re-

placement soil brought in at CONTRACTOR'S expense. The removal and repair of the affected ground will be to the satisfaction of MANAGER.

The disposal of waste oil and lubricants in water courses is expressly prohibited.

CONTRACTOR shall not fuel its vehicles within the confines of a water course without MANAGER'S permission.



EC-9 WATER CROSSINGS

a) General

- i) Prior to commencement of work, CONTRACTOR shall submit to MANAGER for review and approval, an outline of its proposed method for installation of the water crossings in the spread. All crossings up to 35' wide and up to 1 foot of depth of flowing water may be covered by one "TYPICAL" detail. For larger crossings, CONTRACTOR shall submit detailed schedules, construction methods, equipment and procedures customized for each crossing together with special measures as required under Article EC-9 (d) for the applicable crossings.

The approval by MANAGER of method or methods to be used by CONTRACTOR shall not relieve CONTRACTOR of its sole responsibility for the crossing installation.

- ii) Prior to commencement of work on each crossing CONTRACTOR shall furnish MANAGER with the detailed crossing schedule sufficiently in advance to enable MANAGER to give seventy-two (72) hours advance notice to the interested government

agencies, and to deploy its inspectors. Actual construction shall not be carried out unless MANAGER'S inspector is present. Inspectors of the concerned governmental agencies may also be present at the time of construction.

- iii) On certain water courses, timing of the crossing installation is of the utmost importance and the approved construction seasons for these water crossings are noted in Appendix 'B' to Part 9 of the CONTRACT. In submitting its schedules for stream crossings as required under Sub-Article (i) CONTRACTOR shall adhere strictly to the approved construction periods.

No work shall be done on these water crossings outside the approved construction periods unless specifically approved by MANAGER in writing. Such out-of-season work may involve special mitigating and/or restorative measures which will be specified by MANAGER in each case and CONTRACTOR shall be responsible for such measures at no extra cost to OWNER, unless such out-of-season work is required due to delays or decisions by OWNER or MANAGER in which case CONTRACTOR will be duly compensated for extra expenses.

- iv) CONTRACTOR shall carry out the installation work such that the work is completed in as short a

time as possible.

b) Sloping Approaches to Streams and Stream Banks

- i) Removal of vegetation from the sloped approaches and the banks and the width of the right-of-way cleared shall be kept to the minimum necessary for construction. Work areas such as jointing yards, concrete coating yards, etc. if any shall be kept as far away from the stream as possible, always providing adequate vegetated buffer zone between work area and stream.
- ii) Cutting of the trench in the sloped approaches shall not be undertaken until actual pipe laying is to be carried out in order to minimize silt input into the water course. If necessary, the work area shall be graded to prevent surface run-off from entering the trench. Erosion control measures as described in Article EC-3 shall be carried out as required. CONTRACTOR shall take necessary steps to prevent turbid water from the trench from entering the stream.
- iii) Immediately after lowering in of the pipe the trench shall be backfilled to the extent possible and the backfill shall be properly retained until the tying-in is completed. After tying-in CONTRACTOR shall complete the trench backfilling

and build up the banks to their original profile and condition using mechanical compaction to the extent possible. In the event MANAGER determines that insufficient or no suitable material is available from the excavated materials for backfill and building up the banks, CONTRACTOR shall haul in suitable materials from approved outside sources and CONTRACTOR will be compensated for the actual cost thereof. CONTRACTOR shall obtain prior approval from MANAGER for any modifications to the bank profile.

- iv) CONTRACTOR shall be responsible to provide protective measures as required to protect the banks from erosion. CONTRACTOR shall design the protective measures to suit the individual crossings and may consist of rockfacing, rock filled gabions or other special measures. CONTRACTOR shall include all expenses involved in these protective measures under Item A of the Schedule of Unit Prices and will not be entitled for any extra compensation for such measures.
- v) On completion of backfilling, CONTRACTOR shall relieve the compaction on the right-of-way by chisel plowing and discing where ground conditions dic-

tate. CONTRACTOR shall provide herringbone trenches or berms as required to direct surface run-off away from the new filled trench and banks.

- vi) Restoration of the vegetative cover and reforestation shall be carried out on completion of the work as detailed in the "Line List" in each case, or as described by MANAGER at the time of construction. The restoration work may consist of seeding with or without stabilizing agents (hydra seeding, asphalt base, etc.), fertilizing, planting of shrubs, planting of trees, stabilization of right-of-way with mulch, etc. or combinations thereof.

CONTRACTOR will be compensated for work covered under this subarticle (vi) as an extra.

If climatic conditions do not permit completion of restoration work, CONTRACTOR shall temporarily stabilize the area immediately on completion of the installation work and return to complete the restoration work as soon as weather conditions permit.

c) Stream Proper and Stream Bed - General

- i) Under no circumstances shall a stream bed be used as an access road. Where crossing of the stream

is unavoidable, CONTRACTOR shall ensure that such crossing is not done indiscriminately, and shall be confined within the limits of the authorized working width.

- ii) CONTRACTOR shall ensure that the stream flow is maintained at all times to avoid interference with downstream water users. In the event temporary interruption is required for any reason, CONTRACTOR shall obtain prior approval from MANAGER.
- iii) In excavating the trench in the stream bed, CONTRACTOR shall utilize proper equipment and methods to ensure minimum possible disturbance to the stream bed and minimum siltation.
- iv) CONTRACTOR shall take special care in locating the spoil banks from bed excavation so that the excavated materials are properly retained to prevent their being washed back into the stream.
- v) Backfilling shall be carried out in such a manner as to minimize siltation.
- vi) All surplus spoil from the excavation shall be disposed in a dump or disposal area approved by MANAGER.

- vii) If any aquatic plants are uprooted during excavation of the stream bed, they shall be removed and disposed of in approved disposal areas.

CONTRACTOR shall take necessary precautions to ensure that these plants are not accidentally deposited in other streams or lakes.

- viii) Where culverts are installed for crossing of the water course, they shall be of adequate size to be capable of discharging the maximum stream flow as indicated by existing culverts downstream, high watermarks or bank cuts. If road beds are required, they shall be constructed of granular materials. Culverts and road beds must be removed immediately following the Construction of the crossing.

d) Stream Proper and Stream Bed - Special Measures

Certain water courses require special measures in their crossing in view of their environmental sensitivity as detailed below:

i) Siltation Control

Certain water courses are very sensitive to siltation. These are listed in Appendix 'C' to Part 9 of the CONTRACT. CONTRACTOR shall be responsible for carrying out the work on these crossings in

such a manner as to ensure minimum siltation to MANAGER'S satisfaction. CONTRACTOR shall design its own siltation control measures to be followed for each crossing. Such measures may consist of temporary weirs and/or coffer dams to form settling basins, specially designed siltation traps, deflectors, special dredging techniques, etc. CONTRACTOR shall submit full details of proposed siltation control measures to MANAGER for review and approval prior to construction. If settling basins are used, they shall be maintained and cleaned of silt, sand and debris, and must be adequately protected to avoid hazards to persons. The silt loads of these rivers may be monitored by others downstream of the crossing continuously during construction.

CONTRACTOR will be compensated for all extra expenses associated with special siltation control measures as "Extra Work" under the terms and conditions of the CONTRACT.

ii) Granular Backfill

In certain water courses, the excavated material may not be suitable for backfilling of the trench which must be carried out with approved granular materials brought from outside. These crossings



will be designated by MANAGER sufficiently in advance of Construction. Prior to commencement of construction at the designated crossings CONTRACTOR shall stockpile adequate quantities of approved backfill materials. All excavated materials from the designated stream beds shall be disposed of at sites approved by MANAGER. CONTRACTOR will be compensated for hauling away of excavated materials to the disposal sites and for purchasing and hauling in of suitable granular materials as extra work under the terms and conditions of the CONTRACT.

EC-10 TEST WATER

Water to be used for testing of the pipeline is under the control of a "Permit To Take Water" as issued by the government authorities such as the Ministry of Environment of Ontario and the Environmental Protection Service of Quebec. This permit will detail CONTRACTOR'S responsibility for restoration of water supplies interfered with by the testing. Proposed sources which are limited in capacity or already used extensively shall not be used for such purposes. OWNER and MANAGER will assist CONTRACTOR wherever possible in obtaining all necessary permits or approvals from the governing authorities and/or the purchase of required water prior to commencement of the testing.

After the test has been completed, the test water shall be removed from the pipeline as arranged with the local landowners and government authorities. If directed by MANAGER, a meter shall be placed in the discharge line, to indicate the rate of water being removed.

CONTRACTOR shall provide diffusers or other suitable devices to prevent erosion of the ground surface or scouring of water courses during the discharge of test water.

CONTRACTOR shall comply with the permit requirements for and have the sole responsibility for the disposal of test water. This shall be done in such a manner that the convenience and safety of the general public is protected and in a manner satisfactory to the government authorities. Any damage resulting from careless or improper disposal of water shall be for the account of CONTRACTOR.

EC-11 GENERAL ENVIRONMENTAL CONSIDERATIONS

The following articles are generally applicable to all of CONTRACTOR'S operations on a day to day basis with respect to sections a - d; and on an as-required basis with respect to sections e - g.

a) General Housekeeping

CONTRACTOR shall ensure that general rubbish such as food wrappings, garbage and sanitary wastes are confined to the Construction Right-of-Way and other work sites and are collected on a daily basis. Disposal of said wastes is the responsibility of CONTRACTOR and shall be in an approved manner at a site approved by authorities having jurisdiction.

CONTRACTOR shall ensure that the Construction Right-of-Way and/or other work sites are left in a tidy and workmanlike condition following the cessation of daily activities.

Where Crown Land is involved, no disposal of materials will be permitted off the pipeline right-of-way unless prior approval is obtained from the appropriate authorities.

Open burning of waste materials must be approved by

the appropriate government authorities.

b) Dust Control

CONTRACTOR shall exercise care to minimize uncontrolled emissions of dust (particulate matter) from its activities on the Construction Right-of-Way and other work areas. Particular care shall be taken in residential areas. All such control measures taken shall be in accordance with any regulations applicable to interprovincial pipelines and must be approved by MANAGER.

c) Construction Noise

CONTRACTOR shall exercise care to minimize noise from its activities including blasting, in accordance with local regulations. Particular care shall be taken in urban/residential areas to minimize disturbance to the local population.

d) Wildlife

Objective: The following articles are intended to minimize the disturbance by construction of valuable wildlife species and/or the natural habitat upon which such species depend for their existence. It is recognized that some disturbance is inevitable if construction is to proceed; however, it is the unnecessary and uncalled for disturbances towards which the following articles are aimed:

- i) CONTRACTOR shall make every effort that wildlife encountered along the Construction Right-of-Way or other work areas are not unduly harassed by its equipment or personnel.
- ii) Any influx of bears onto the Construction Right-of-Way or other work areas shall be reported to MANAGER.
- iii) CONTRACTOR shall avoid storage of its machinery and supplies in areas of grasses, herbs and shrubs designated by government authorities for the protection of food supplies for wildlife.

e) Noxious Weeds

Should MANAGER determine the existence of noxious weeds which could be carried forward by construction equipment from an infested area to a clean area, the boundaries will be marked by MANAGER. As construction equipment proceeds from one area to the other, CONTRACTOR shall hose down and thoroughly wash the equipment before proceeding into the clean area.

f) Dewatering Activities

When dewatering is required such as from the trench, potholes, etc. CONTRACTOR shall construct diffusers or other suitable devices to prevent erosion of the ground surface.

g) Pipeline Markers

Where pipeline markers are to be placed in parks or recreation areas, placement of the markers shall be designated by MANAGER in conjunction with the administering authorities of the park or recreation area.

EC-12 COMPENSATION FOR NON-TRADITIONAL WORK

CONTRACTOR shall respect and perform work according to instructions which may, from time to time, be issued by MANAGER.

If CONTRACTOR can demonstrate to the satisfaction of MANAGER that the work performed, or the manner in which work is to be performed, is additional to traditional pipeline practice or causes unexpected or undue financial hardship to CONTRACTOR, then MANAGER will negotiate with CONTRACTOR a settlement.



APPENDIX C

SOME LANDOWNER LETTERS AND LEGAL AGREEMENTS.

C-1



INTERPROVINCIAL PIPE LINE LIMITED  
Box 2340  
St. Laurent, Quebec  
H4L 4Y4  
May 28, 1975

Dear Landowner:

On May 22nd, the National Energy Board issued a Certificate of Public Convenience and Necessity for the construction of our much talked of Sarnia to Montreal extension. This means simply that we have been given the green light to get on with construction and build the line; a project deemed to be in the national interest by the Government of Canada and endorsed by the Provinces of Ontario and Quebec.

Survey work is all but complete. Pipe has been rolled and stock-piled ready for the right-of-way. Any potential environmental concerns are being studied along the route and since this is the final phase of the preparatory work prior to construction, you will soon be asked to complete an easement document.

Because the Government of Canada has urged that we construct the line as soon as possible, arrangements are being made for seven contractors or spreads to work on the line simultaneously to ensure the earliest possible completion date.

A conscientious effort will be made to keep inconvenience to a minimum. To this end, Bechtel Canada Limited, who are our agents/managers on this project, will be contacting you concerning any problems pertinent to your particular property before we cross it. During construction, there will be a temporary field office for each spread and the telephone number and persons responsible for running the job and coping with your problems will be made known to you ahead of time.

At the conclusion of construction, your property will be cleaned up and damages assessed and properly settled. The release you will be asked to sign will cover damages to the date of signing. It is the company's intention to make a second contact with you the following year to ascertain if any additional problems have arisen as a result of the construction.

Attached hereto is a recap of the company's obligations to the landowner as agreed upon at the May 1974 N.E.B. Hearings. In closing, we hope you will bear with us. In a project of this size, there will obviously be some disturbance, however, the company hopes to keep damages and any inconvenience to a minimum. With few exceptions, we have in the past been able to resolve any problems in a manner satisfactory to both parties and we can assure you that the company fully expects to settle any difficulties with you in a similar manner.

Yours very truly,

D.J. Ross  
Project Manager

DJR/ch  
Enclosure

INTERPROVINCIAL PIPE LINE LIMITEDINFORMATION TO LANDOWNERS

As stated at the hearings of our Application in May and October, 1974, Interprovincial will contact all landowners to explain the project and will confirm to them in writing company policies, practices and procedures applicable to this construction program. The following is a summary of the principal items of concern:

1. Prior to construction, an identified representative will visit each landowner to ascertain areas of concern relative to each property. These items will be documented, a copy left with the owner, and the information circulated to spread inspectors responsible for overseeing the work. Every effort will be made to have one man as the contact in this area and his name and telephone number will be provided to you.
2. Fencing: Prior to grading and clearing, fences will be cut or diverted as necessary and new gates installed. Fences will be properly braced prior to cutting to prevent permanent sag to long runs.
3. Topsoil: Except where otherwise requested by the landowner, topsoil will be removed on arable land. Topsoil will be removed to a width of not less than 10 feet centered over the ditch line, stockpiled separately from the subsoil and replaced following the pipe line installation.
4. Tile Drains: Drains cut will be flagged and repaired with pipe resting on concrete blocks. Tile runs will be snaked the entire width of the working area. Landowners will have the opportunity to inspect each drain repaired.

Helecore pipe or like product will be used for repairs. In special cases, interceptor header drains will be installed on the upstream side of the trench. Special problems will be discussed with landowner's tile contractor if so required.

If the location of future drains is known prior to construction, the depth of the pipe line will be lowered to accommodate them. If in the future drains presently unplanned are laid, the company is prepared to take whatever steps are required at its own expense to ensure its line does not interfere with such drains. The company will provide an inspector for any new tile runs across the pipe line in future years.

5. Livestock: Temporary restrictions, crosswalks and relocation of livestock are recognized as an individual problem and will be worked out with landowners prior to construction.
6. Rock: Rock brought to the surface during construction will be picked up at the conclusion of construction and disposed of in a manner satisfactory to the landowner. If additional rock picking is required the following year, this will be undertaken, or arrangements made with the owner to do the work at company expense.

7. Natural Water Drainage: Every effort will be made to avoid potholes, marshes or similar water areas. However, if drained, they will, if requested by the landowner, be restored to their pre-construction condition as far as practicable. Terraces and other erosion control devices will be constructed where necessary to prevent soil erosion on slopes on the right-of-way.
8. Timber: Timber will be cruised prior to being cut and a fair value and disposal discussed with the landowner.
9. Clean-up: Weather and soil conditions permitting, clean-up will be completed as soon as practical. The construction right-of-way will be chisel ploughed and disced. Surplus subsoil will be removed, if so required by the landowner.
10. Check-off: Prior to Interprovincial's release of the contractor, the landowner will have an opportunity to inspect his property, tile drains and fences, and be asked to approve the clean-up and restoration.
11. Damage Release: When the damages have been evaluated and agreed upon, the landowner will be asked to sign a damage release on receipt of payment.

The Interprovincial damage release form is open ended and when signed, covers damages to the date of signing only. During the crop year following construction Interprovincial will visit each landowner to settle any subsequent damage for crop loss due to construction. In subsequent crop years Interprovincial representatives will be available to visit landowners to review any subsequent problems or concerns.

Damage settlements will recognize any inconvenience caused to landowners during construction.

12. Recurring Problems: Permanent maintenance crews will be located along the route to keep the line in repair and to assist with any problems that occur on the right-of-way due to the presence of the pipe line.

The company accepts the responsibility that it is in the interests of all parties that the right-of-way be returned to normal usage as quickly as possible. Accordingly, every care will be taken during construction to protect the interests of the landowner and all phases of construction will be closely supervised with particular attention given to environmental considerations.

Map \_\_\_\_\_

RIGHT-OF-WAY

Tract No. \_\_\_\_\_

Station: Fr. \_\_\_\_\_

PARCEL ADVICE

Schedule No. \_\_\_\_\_

To \_\_\_\_\_

Advice No. \_\_\_\_\_

Prox. M.P. \_\_\_\_\_

Date \_\_\_\_\_

Restrictions \_\_\_\_\_

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Damage Alert \_\_\_\_\_

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Title Change \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Information Source:

Name \_\_\_\_\_

How to Contact \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
R/W Agent

TRACT NO. \_\_\_\_\_

**OPTION FOR RIGHT-OF-WAY AND EASEMENT**  
**INTERPROVINCIAL PIPE LINE LIMITED**  
**ONTARIO**

XX (We)

~~of the~~  
 in the Province of Ontario, hereunder called "the Owner", being registered as owner of an estate in fee simple in possession (as joint tenants and not as tenants in common) or entitled to become registered as owner of such an estate under an Agreement for Sale or unregistered transfer or otherwise, subject, however, to such encumbrances, liens and interests as may be ascertained by carrying out the usual searches, in all that certain parcel or tract of land and premises situate in the Borough of Scarborough in the Municipality of Metropolitan Toronto in the Province of Ontario and described as follows:

See Schedule "A" annexed hereto.

(being registered in the Land Registry Office for the Land Titles Division of \_\_\_\_\_ as Parcel \_\_\_\_\_ in the register for \_\_\_\_\_), hereinafter called the "said land" in consideration of the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) the receipt of which is hereby acknowledged, do hereby offer and agree to grant, convey and transfer to INTERPROVINCIAL PIPE LINE LIMITED, a company incorporated by Special Act of the Parliament of Canada, continued by Letters Patent, and being empowered to construct and operate interprovincial and/or international pipe lines for the transportation of oil, gas, other liquid and gaseous hydrocarbons and products thereof, and any commodity which can be conveyed through a pipe line and having its head office in the City of Edmonton, in the Province of Alberta, hereinafter called "Interprovincial", an unencumbered easement in the form and substance of the Agreement for Right-of-Way and Easement attached hereto and marked "A" and for the purposes therein enumerated for the sum of \_\_\_\_\_ Dollars (\$ \_\_\_\_\_) per acre of the right-of-way as defined therein.

The course and location of the right-of-way upon the said land is to be selected by Interprovincial.

This offer is to be irrevocable until midnight of the \_\_\_\_\_ day of \_\_\_\_\_ A.D. 19\_\_\_\_ and may be accepted at any time before then by Interprovincial mailing to me a letter of acceptance signed by Interprovincial addressed to me at \_\_\_\_\_ in the Province of \_\_\_\_\_

This offer if accepted on or before the said date shall thereupon constitute a binding contract of purchase for the easement and the sum paid for this option shall be applied on the purchase price.

And I covenant and agree that I will in the event of the acceptance of this offer forthwith upon the request of Interprovincial execute an agreement for a right-of-way and easement in favour of Interprovincial in the form attached hereto and further will execute such other and further documents of title in respect of the said land as may be reasonably required by Interprovincial.

And I further covenant and agree that in the event of the acceptance of this offer by Interprovincial as hereinbefore provided, Interprovincial shall forthwith upon such acceptance have the immediate right to enter upon the said land and place its equipment thereon and to commence the construction of its said pipe lines and works in accordance with the terms, stipulations and conditions of the form of agreement for right-of-way and easement attached hereto, which terms, stipulations and conditions shall immediately become effective and bind the parties hereto as though contained in this offer.

And it is further understood and agreed that in the event of this offer being accepted the amount payable herein in respect of the purchase price shall be paid prior to the commencement of construction to me or to those otherwise interested in the said land by encumbrance or otherwise.

~~And I~~  
~~for right of way and easement for the purpose of bringing down the line~~

It is further understood and agreed that Interprovincial shall have the absolute right to assign this offer and all rights, privileges and benefits accruing to it hereunder upon giving the Owner ten (10) days' written notice of its intention so to do.

This offer shall not nor shall anything herein contained affect or prejudice Interprovincial's statutory rights to acquire the said land or any other portion or portions of the land of the Owner under the provisions of the National Energy Board Act (Canada), or any other laws, which rights may be exercised at Interprovincial's discretion in the event of the Owner being unable or unwilling for any reason to carry out the terms of this offer or give to Interprovincial a clear and unencumbered title to the easement.

where the context or the party or parties hereto so require and the rest of the sentence shall be construed as if the grammatical and terminological changes thereby rendered necessary had been made.

IN WITNESS WHEREOF I, the Owner, and I, the wife of the Owner, have hereunto set my (our) hand(s) and seal(s) at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, A.D. 19\_\_\_\_\_.

SIGNED, SEALED AND DELIVERED  
— in the presence of —

\_\_\_\_\_  
NORMAN  
\_\_\_\_\_  
ELIZABETH J. DRZEWIECKA

**AFFIDAVIT AS TO AGE AND MARITAL STATUS**  
XX WE NORMAN J. DRZEWIECKA and ELIZABETH J. DRZEWIECKA

of the Borough of Scarborough

in the Municipality of Metropolitan Toronto

make oath and say: When we executed the attached instrument

WE were both at least eighteen years old.

~~XXXX~~ ~~married/divorced/widower.~~

~~XXXX wife/husband.~~

We were married to each other.

We held the land as Joint Tenants/~~Trustees/Partnership/Partnership~~

SEVERALLY) SWORN before me at the

in the

this day of 19

A Commissioner for taking Affidavits, etc.

NORMAN J. DRZEWIECKA

ELIZABETH J. DRZEWIECKA

### AFFIDAVIT OF SUBSCRIBING WITNESS

I,

of the

in the

make oath and say:

I am a subscribing witness to the attached instrument and I was present and saw it executed

at \_\_\_\_\_ by NORMAN J. DRZEWIECKA and ELIZABETH J. DRZEWIECKA

I verily believe that each person whose signature I witnessed is the party of the same name referred to in the instrument.

SWORN before me at the

in the

this day of 19

A Commissioner for taking Affidavits, etc.

**AGREEMENT FOR RIGHT-OF-WAY AND EASEMENT**  
**INTERPROVINCIAL PIPE LINE LIMITED**  
**ONTARIO**  
**THE REGISTRY ACT AND THE LAND TITLES ACT**

I, (We) \_\_\_\_\_  
 of \_\_\_\_\_  
 in the Province of Ontario \_\_\_\_\_  
 hereinafter called the "Owner", being registered or entitled to become registered as owner of an estate in fee simple subject, however, to such encumbrances, liens and interests as may be ascertained by carrying out the usual searches, in that certain parcel or tract of land and premises situate in the \_\_\_\_\_ of \_\_\_\_\_  
 in the \_\_\_\_\_ of \_\_\_\_\_ in the Province of Ontario  
 and described as follows:

(being registered in the Land Registry Office for the Land Titles Division of \_\_\_\_\_  
 as Parcel \_\_\_\_\_ in the register for \_\_\_\_\_)  
 hereinafter called the "said land"; in consideration of the sum of \_\_\_\_\_  
 Dollars (\$\_\_\_\_\_), the receipt of which is hereby acknowledged, now paid to the Owner (or others interested in the said land by encumbrances or otherwise) by INTERPROVINCIAL PIPE LINE LIMITED, a company incorporated by Special Act of the Parliament of Canada, continued by Letters Patent, and having its head office in the City of Edmonton, in the Province of Alberta, hereinafter called "Interprovincial" and in consideration of the covenants and conditions hereinafter mentioned to be kept and performed by Interprovincial, DO HEREBY GRANT, CONVEY AND TRANSFER to Interprovincial an easement for a right-of-way on, over, under and across a strip of the said land sixty (60) feet in width, shown on a plan of survey, \_\_\_\_\_ in the Land Registry Office for the \_\_\_\_\_  
 Division of \_\_\_\_\_ and designated thereon as Part \_\_\_\_\_, (being part of said Parcel) (which 60 foot strip is hereinafter referred to as the "right-of-way") for the construction, operation, maintenance, inspection, alteration, removal, replacement, reconstruction, and/or repair of one or more pipe lines and other works connected therewith for the transportation of oil, gas, other liquid and gaseous hydrocarbons and products thereof, and any commodity which can be conveyed through a pipe line together with the right of ingress and egress to and from the right-of-way over the said land for all purposes necessary or incidental to the exercise and enjoyment of the rights herein granted.

These rights and easement are granted as and from the date hereof and for so long thereafter as Interprovincial desires to exercise the same on the following terms which are hereby mutually covenanted and agreed to:

1. The Owner shall have the right fully to use and enjoy the right-of-way except as may be necessary for the purposes herein granted to Interprovincial; provided, however, that the Owner shall not, without the prior written consent of Interprovincial, excavate, drill, install, erect or permit to be excavated, drilled, installed or erected on, over, under or through the right-of-way any pit, well, foundation, pavement, building or other structure or installation.

2. Notwithstanding the proviso to Clause 1 above,

- (i) Interprovincial will not object to the paving of farm lanes, private roads, driveways and sidewalks across the right-of-way, and
- (ii) the Owner may erect fences on the right-of-way or any portion thereof, and
- (iii) the Owner may construct drains or repair existing drains on the right-of-way or any portion thereof.

The Owner agrees to exercise a high degree of care in carrying out any excavation or drilling necessary for such fencing, paving or drainage, and in no event shall the Owner or his contractors perform such work in such a manner as to endanger or damage the pipe line. Before the commencement of any such work, the Owner shall give to Interprovincial at least five (5) days prior notice in writing so as to enable a representative of Interprovincial to inspect the site of the proposed work and advise how it may be performed without damage to the pipe line. Such notice shall be addressed to Interprovincial at P.O. Box 128, Sarnia, Ontario, N7T 7H8.

3. Interprovincial will compensate the Owner for damage done to any buildings, crops, tile drains, fences, timber, culverts, bridges, lanes, livestock, or other improvements on the said land by reason of the exercise of the rights hereinbefore granted.

4. Interprovincial will, as soon as weather and soil conditions permit and insofar as it is practicable so to do, bury and maintain all pipe lines so as not to interfere with the drainage or ordinary cultivation of the said land, and restore all drains, damaged or disturbed by the said operations, according to good drainage practice.



- It is agreed that the Owner shall have the right to transfer his interest in the said land and the covenants and conditions herein contained in one or more parcels and by one or more conveyances, and that all the covenants and conditions herein contained shall extend to and be binding upon and enure to the benefit of each successor in title with respect to each and every parcel so transferred.

The aforesaid right-of-way and easement is hereby declared to be appurtenant to Interprovincial's undertaking including, but not limited to, Interprovincial's lands located in the City of Sarnia in the County of Lambton and Province of Ontario and being composed of Lots Numbers 10, 31, 32, 50, 51, 52, 67, 68, 75, 76 and 77 and the north half of Lot Number 9 all according to Registered Plan Number 270 for the said City of Sarnia, and in the Township of Sarnia in the said county and being composed of All and Singular that certain parcel or tract of land and premises, situate, lying and being in the Township of Sarnia in the County of Lambton and being composed of that part of Sub-Lot 11, Lot A, according to registered Plan 13 for the said Township of Sarnia, described as follows: Premising that the easterly limit of Indian Road has a bearing on North 0 degrees 44 minutes East and relating all bearings herein thereto; commencing at the intersection of the line between Sub-Lots 5 and 11, Lot A, according to registered Plan 13 aforesaid with the easterly limit of Indian Road; thence North 88 degrees 41 minutes East along the line between Sub-Lots 5 and 11, Lot A, aforesaid, a distance of 24.02 feet to a point which said point is the point of commencement; thence South 0 degrees 44 minutes West 200 feet; thence South 89 degrees 16 minutes East 70 feet to a point; thence North 0 degrees 44 minutes East 202.50 feet more or less to the line between Sub-Lots 5 and 11, Lot A, aforesaid; thence South 88 degrees 41 minutes West along the said line between Sub-Lots 5 and 11, Lot A, aforesaid 70.04 feet more or less to the point of commencement, and to each of such lots and parcels separately as well as collectively.

## AFFIDAVIT AS TO AGE AND MARITAL STATUS

I/WE

of the

in the

make oath and say:

When

executed the attached instrument

I/WE

at least eighteen years old.

I was

married/divorced/widower.

was my wife/husband.

We were married to each other.

We held the land as Joint Tenants/Trustees/Partnership Property.

(SEVERALLY) SWORN before me at the

in the

this

day of

19

A Commissioner for taking Affidavits, etc.

DATED , 19

TO

INTERPROVINCIAL PIPE LINE  
LIMITEDP.O. Box 128  
Sarnia, OntarioAGREEMENT FOR  
RIGHT-OF-WAY AND EASEMENT

Municipality:

Plan:

Lots:

INTERPROVINCIAL PIPE LINE  
LIMITED

C-10  
WORK ORDER AGREEMENT

Tract \_\_\_\_\_  
Lot \_\_\_\_\_ Con. \_\_\_\_\_

Authorization is hereby granted by INTERPROVINCIAL PIPE LINE LIMITED to

\_\_\_\_\_ to perform the following described work:

Estimated work area \_\_\_\_\_ Total Cost \_\_\_\_\_

Upon satisfactory completion of the said work, prompt acceptance and payment shall be made by Interprovincial Pipe Line Limited in the sum of \$ \_\_\_\_\_ and the undersigned LANDOWNER shall execute a complete release and discharge to INTERPROVINCIAL PIPE LINE LIMITED, its agents, contractors and assigns of all manner of actions, causes of actions, claims or demands whatsoever which may arise out of the work performed by said LANDOWNER as set forth above.

NOTE

To allow the pipeline contractor to carry out clean-up operations on neighboring properties, it may be necessary to travel upon the right-of-way. In such cases, Interprovincial Pipe Line Limited shall be responsible for any damages caused.

IN WITNESS WHEREOF we have set our hands this \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_.

\_\_\_\_\_  
LANDOWNER

\_\_\_\_\_  
BECHTEL CANADA LIMITED - AGENT FOR  
INTERPROVINCIAL PIPE LINE LIMITED

Phone No. \_\_\_\_\_

\_\_\_\_\_  
SIGNED IN THE PRESENCE OF

\_\_\_\_\_  
SIGNED IN THE PRESENCE OF



INTERPROVINCIAL PIPE LINE LIMITED  
Box 2340  
St. Laurent, Quebec  
H4L 4Y4

January 22nd 1976.

SUBJECT: Sarnia-Montreal Extension.

Dear Landowner:

You may be interested in a brief status report with special reference to clean-up work after the line is built. It had been the hope to have all pipe in the ground by the end of 1975 but it was just not possible. Weather was the greatest contributing factor in not making the objective. This has made necessary a winter program on three of our seven construction spreads. Final clean-up will be done when conditions are suitable in the Spring.

You the landowner, may find yourself in any one of five different categories depending where your property is located along the line. The status of each category should be as follows:

1. Construction and final clean-up is complete, damage release signed. The company's obligation is to revisit during the growing season this year to determine if additional damage is evident.
2. Construction and final clean-up complete. You will have been asked to sign a release for the work done by the contractor, but not yet contacted for settlement of damages which is yet to come.
3. Construction and rough clean-up are complete and final clean-up is postponed until the Spring. When, will depend entirely on proper weather and soil conditions and there may be some conflict with your own planting program. If this occurs, this will be a delay for which the company is responsible.
4. Construction is under way. Clearing, grading, and removal of topsoil were done before winter conditions set in. Pipe laying and rough back-fill will be completed and final clean-up left until Spring.
5. Construction is imminent under winter conditions. Topsoil will not be removed over ditch line as it is not practical so to do. Construction will be done under winter conditions and clean-up and soil restoration done in Spring or early Summer.

In cooperation with the Departments of Agriculture of Ontario and Quebec and Professor McKenzie of MacDonald College, a soil restoration program is being developed for use in some areas where there have been sloppy conditions during the construction. More information on this matter is being prepared and owners involved will be made aware of any curative efforts to be undertaken on their property.

As construction completes and rights-of-way problems are resolved, the temporary Bechtel field offices will be closed and staff reduced. In each case, there should be a reference telephone number to that you already have. Failing satisfactory local contact, would you please direct any queries you may have to our Montreal office.

Yours very truly,

D.J. Ross,  
Project Manager.

## INVESTIGATION AND REPORT OF DAMAGE

Tract No. ....

County .....

Municipality .....

Owner ..... Tenant .....

Address ..... Address .....

## DESCRIPTION OF DAMAGE:

	Landowner	Tenant	Manager	Contractor
Estimate of Damage .....	\$ .....	\$ .....	\$ .....	\$ .....
Offer to Settle .....	\$ .....	\$ .....	\$ .....	\$ .....
Final Settlement .....	\$ .....	\$ .....	\$ .....	\$ .....
Interview with whom .....	\$ .....	\$ .....	\$ .....	\$ .....

Figures below to show total damage to owner, tenant and contractor:

Detail of Damage	Total		Amount Paid				Total		Charge
			Owner	Tenant					Contractor

Agreed: .....  
Manager's Representative

Prepared by: .....

.....  
Contractor's Representative

DATE: \_\_\_\_\_

AUTHORIZATION FOR EASEMENT PAYMENTS  
IN EXCESS OF APPROVED VALUES

OWNER \_\_\_\_\_ R/W NO. \_\_\_\_\_  
 ADDRESS \_\_\_\_\_ PHONE \_\_\_\_\_  
 LOT \_\_\_\_\_ CON. \_\_\_\_\_ PLAN \_\_\_\_\_ TWP. \_\_\_\_\_  
 COUNTY \_\_\_\_\_ PROVINCE \_\_\_\_\_  
 SIZE OF EASEMENT \_\_\_\_\_ FT. \_\_\_\_\_ FT. AREA \_\_\_\_\_ SQ. FT. \_\_\_\_\_ ACRES

RECORDED AUTHORIZED PAYMENT

\_\_\_\_\_ ACRE @ \$ \_\_\_\_\_  
 \_\_\_\_\_ FEET @ \$ \_\_\_\_\_  
 TOTAL \$ \_\_\_\_\_

FEE APPRAISED VALUE

\_\_\_\_\_ ACRE @ \$ \_\_\_\_\_  
 \_\_\_\_\_ FEET @ \$ \_\_\_\_\_  
 TOTAL \$ \_\_\_\_\_

ASKING PRICE BY OWNER

\_\_\_\_\_ ACRE @ \$ \_\_\_\_\_  
 \_\_\_\_\_ FEET @ \$ \_\_\_\_\_  
 TOTAL \$ \_\_\_\_\_

SUGGESTED PAYMENT

\_\_\_\_\_ ACRE @ \$ \_\_\_\_\_  
 \_\_\_\_\_ FEET @ \$ \_\_\_\_\_  
 TOTAL \$ \_\_\_\_\_

REASON

SUBMITTED BY: \_\_\_\_\_

TOTAL AMOUNT  
APPROVED \$ \_\_\_\_\_

RECOMMENDED BY: \_\_\_\_\_  
 Bechtel Canada Ltd.

APPROVED BY: \_\_\_\_\_  
 Interprovincial Pipe Line Ltd.

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

PAGE \_\_\_\_\_ OF \_\_\_\_\_

DATE \_\_\_\_\_  
FROM Lands \_\_\_\_\_

SPREAD NO. \_\_\_\_\_  
TRANSMITTAL NO. \_\_\_\_\_

COPIES TO. Original - Montreal  
Green - R/W office  
Yellow ) - Construction  
Gold )  
Pink - Environmental

[illegible]

Received by \_\_\_\_\_  
Construction

## INSPECTION OF TEMPORARY CLEAN UP

Tract No. \_\_\_\_\_

Date \_\_\_\_\_

To Interprovincial Pipe Line Limited.

Gentlemen:

I have inspected the temporary work done by clean-up crews across property described as \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Township \_\_\_\_\_ County of \_\_\_\_\_

owned by \_\_\_\_\_

which was caused by the construction of your pipeline across said premises.

The temporary clean-up and restoration work, is acceptable to me until such time as weather and ground conditions permit you to return and carry out satisfactory final clean-up operations on my property, after which I will again be contacted for approval of the final clean-up.

\_\_\_\_\_  
OWNER\_\_\_\_\_  
TENANT\_\_\_\_\_  
WITNESS\_\_\_\_\_  
OWNER'S REPRESENTATIVE



INSPECTION APPROVAL OF CLEAN UP

Tract No. \_\_\_\_\_

Date \_\_\_\_\_

To Interprovincial Pipe Line Limited.

Gentlemen:

I have inspected the work done by clean up crews across property described as \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Township of \_\_\_\_\_ County of \_\_\_\_\_

owned by \_\_\_\_\_

Which was caused by the construction of your pipeline across said premises.

The clean up, including repair and restoration of any fences cut, is satisfactory to me.

\_\_\_\_\_  
OWNER

\_\_\_\_\_  
TENANT

\_\_\_\_\_  
WITNESS

\_\_\_\_\_  
OWNER'S REPRESENTATIVE

Date .....

RECEIPT AND RELEASE FOR DAMAGES

Tract .....

ONTARIO-QUEBEC

I, .....  
 .....  
 of the Township of ....., County .....  
 in the Province of ..... hereby acknowledge that I have received from  
 Interprovincial Pipe Line Limited, its Agents, Contractors, Sub-Contractors and Assigns  
 the sum of  
 and /100 Dollars (\$) in full settlement of all claims against them or  
 either of them for loss and damage of any nature whatsoever sustained or suffered by me  
 to the date hereof as a result of the operations of the said Interprovincial Pipe Line  
 Limited, its Agents, Contractors, Sub-Contractors or Assigns in surveying, constructing  
 and maintaining an oil pipe line across the .....  
 .....  
 .....  
 Township of ..... County .....

and I hereby release and discharge the said Interprovincial Pipe Line Limited and its  
 Agents, Contractors and Sub-Contractors and Assigns and each of them of and all manner  
 of actions, causes of action, claims or demands whatsoever which I now have for or by  
 reason of or arising out of the aforementioned operations up to the date hereof.

Signed in the presence of: .....  
 ..... .....

NOTE:

Where additional problems become evident in the future, please contact Interprovincial  
 Pipe Line Limited's District Offices:

Box 128, Sarnia, Ontario N7T 7H8 (Telephone: 519-542-7701) AND/OR

745 Burnett Street, Kingston, Ontario (Telephone: 613-389-7020) - K7M 5W2

APPENDIX D

LANDOWNER QUESTIONNAIRES



Ontario

Ministry of the  
Environment

135 St. Clair Avenue West  
Suite 100  
Toronto Ontario  
M4V 1P5

JUNE 1976

LANDOWNER SURVEY

SARNIA-MONTREAL INTERPROVINCIAL PIPE LINE

Introduction

My name is \_\_\_\_\_ and I am a research assistant with the Ontario Ministry of the Environment. I am contacting you with respect to a landowner survey that the Ministry has initiated concerning the recently constructed crude oil pipeline.

The pipeline project is under Federal jurisdiction. But, at the time of the National Energy Board (NEB) Hearings on the proposed pipeline, the Government of Ontario intervened before the NEB and tabled a number of detailed requests pertaining to pipeline construction. The submission focused on the physical environment as related to the protection and restoration of agricultural land and the natural environment in Ontario. The rights of landowners along the route were also emphasized.

It is intended that this survey determine whether the issues raised by the Province at the time of our intervention before the NEB have been adequately addressed by the pipeline company and the extent to which further changes in future pipeline construction procedures will be recommended by Ontario to the Federal Government.

We are asking for your co-operation in filling out a questionnaire. Could you please spare about 15 minutes of your time?

MINISTRY CONTACTS

Messrs. Murray G. Jones/Lyle F. Parsons,  
Environmental Assessment Section,  
Environmental Approvals Branch.

Telephone: (416) 965-3198

Q U E S T I O N N A I R E

LANDOWNER SURVEY

INTERPROVINCIAL PIPE LINE - SARNIA TO MONTREAL

I. GENERAL INFORMATION

Interview \_\_\_\_\_ Pick-Up \_\_\_\_\_ Mail In \_\_\_\_\_  
Spread #: \_\_\_\_\_ Mile Post #: \_\_\_\_\_ Twsp: \_\_\_\_\_  
Landowner Name: \_\_\_\_\_  
Size of Property \_\_\_\_\_

1. Do you rent \_\_\_\_\_ lease \_\_\_\_\_ own \_\_\_\_\_ the property?
2. For how many years have you lived on and/or owned the property?  
\_\_\_\_\_.

3a. What is the main land use? (check one of the below, additional description if necessary)

residence \_\_\_\_\_  
agriculture \_\_\_\_\_  
conservation \_\_\_\_\_  
municipal \_\_\_\_\_  
other \_\_\_\_\_

b. If agricultural land, what type? (check as many as apply)

beef \_\_\_\_\_ cash crop \_\_\_\_\_  
dairy \_\_\_\_\_ mixed \_\_\_\_\_  
poultry \_\_\_\_\_ row \_\_\_\_\_  
swine \_\_\_\_\_ crop \_\_\_\_\_

4a. Has any other pipeline been constructed on this property previous to 1975? Yes \_\_\_\_\_ No \_\_\_\_\_

b. (If yes for a) what pipeline built it?  
\_\_\_\_\_

c. (If yes for a) were you satisfied with the recovery of your property after the restoration process was completed?

Yes \_\_\_\_\_ No \_\_\_\_\_

d. (If yes or no for c) why were or weren't you satisfied?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## II. PLANNING THE PIPELINE

5. As far as you can remember, on what date and by what method did you first become aware of Interprovincial Pipe Line Ltd.'s (IPL) intention to build this pipeline?

Date: (as specific as possible) \_\_\_\_\_

Method: (for example, newspaper, pipeline official, word-of-mouth, etc.) \_\_\_\_\_

- 6a. National Energy Board Hearings were held in Ottawa in the spring of 1974 to discuss the application of IPL for a 'Permit of Convenience and Necessity' to construct the pipeline. Were you aware of these Hearings?

Yes \_\_\_\_\_ No \_\_\_\_\_

- b. Did you attend these Hearings in Ottawa?

Yes \_\_\_\_\_ No \_\_\_\_\_

- c. Why did or didn't you attend?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- d. (If yes for a) do you have any comments to offer about the content, and final decisions of the Hearings?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## III. LAND NEGOTIATIONS

- 7a. Just before you were first contacted by pipeline officials, what written information did you have available about the pipeline and about your rights as a landowner (i.e. National Energy Board Act)?

(title if possible) 1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

- b. On what date were you first contacted by pipeline officials about land agreements?

(as specific a date as possible) \_\_\_\_\_

- c. What written information did these officials give to you?

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

8a. From what sources did you obtain your information about the pipeline project?

(check as many as apply and name if possible)

check	name	check	name
_____	newspaper _____	_____	pipeline officials _____
_____	radio _____	_____	public meetings _____
_____	television _____	_____	written material _____
_____	word-of-mouth _____	_____	other _____

b. What source(s) of information (as above) did you feel was (were) most informative for you?

Source(s) 1. \_\_\_\_\_ 2. \_\_\_\_\_  
3. \_\_\_\_\_ 4. \_\_\_\_\_

Why was (were) this source(s) informative for you?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

DK \_\_\_\_\_

9a. Did you attend any public meetings concerning the pipeline?

Yes \_\_\_\_\_ No \_\_\_\_\_

b. (If yes for a) what organization held these meetings?

\_\_\_\_\_

10a. Did you attempt to obtain additional information about the pipeline?

Yes \_\_\_\_\_ No \_\_\_\_\_

b. Why did you or why didn't you? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. (If yes for a) was it easy for you to obtain this information?

Yes \_\_\_\_\_ No \_\_\_\_\_

d. (If necessary) Explain the situation. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. On August 6th, 1975, the National Energy Board announced expropriation hearings for September 4th (Sarnia), 5th (Kitchener), 8th (Ottawa) for Interprovincial's temporary and permanent land requirements for pipeline routing.

a. Did you know about these meetings?

Yes \_\_\_\_\_ No \_\_\_\_\_

b. (If yes to a) how did you find out about the meeting?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. Did you attend the meeting in your area?

Yes \_\_\_\_\_ No \_\_\_\_\_

d. (If yes for a) do you have any comments to offer concerning the content, and final decisions of the meeting(s)?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12a. On what date did you first sign any legal agreements with pipeline officials?

(as specific as possible) \_\_\_\_\_

b. What completed copies of legal agreements do you have?

(name) 1.  
2.  
3.  
4.  
5.

13a. Was any part of your land expropriated by IPL?

Yes \_\_\_\_\_ No \_\_\_\_\_

b. (If yes for a) what reasons can you give for your decision to follow this course of action?

1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_

14. Did you see a final plan of where the pipeline would run through your property before you signed any final agreements?

Yes \_\_\_\_\_ No \_\_\_\_\_



15. Do any of the legal agreements you have signed allow IPL to construct another pipeline through the 60 feet easement on your property?  
Yes \_\_\_\_\_ No \_\_\_\_\_ DK \_\_\_\_\_
16. Can you offer any suggestions for improving future negotiation procedures?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 17a. During negotiations or any time prior to construction, did IPL or their representative, Bechtel Canada Ltd. record areas on your property that needed special consideration?  
Yes \_\_\_\_\_ No \_\_\_\_\_
- b. What special considerations were made (refer to original copy if possible)?
- |          |          |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ |          |

#### IV CONSTRUCTION ACTIVITIES

- 18a. What was the name of the construction company in your area?  
DK \_\_\_\_\_
- b. What was the name of the contractor's chief man (spread boss)?  
DK \_\_\_\_\_
- c. Were you notified when construction would start on your property?  
Yes \_\_\_\_\_ No \_\_\_\_\_ DK \_\_\_\_\_
- d. When did pipeline construction start on your property?  
(as specific as possible) \_\_\_\_\_
- 19a. Did you make any written or non-written agreements with the contractor prior to or during the pipeline construction?  
Yes \_\_\_\_\_ No \_\_\_\_\_
- b. (If yes for a) what agreements were made?

written: \_\_\_\_\_

\_\_\_\_\_

non-written: \_\_\_\_\_

\_\_\_\_\_

20a. What additional requests did you make with this pipeline contractor during construction on the property?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

b. Were all these requests fulfilled?

Yes \_\_\_\_\_ No \_\_\_\_\_ DK \_\_\_\_\_

c. (If no for b) do you have any suggestions to offer as to why these requests were not fulfilled?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

21a. Did you have any written information or guidelines available on the requests that landowners were allowed to make, at the time you made the requests to the contractors?

Yes \_\_\_\_\_ No \_\_\_\_\_ DK \_\_\_\_\_

b. (If yes for a) what information?

(name) \_\_\_\_\_

22a. Did the agreed upon easement and/or right-of-way change during the course of pipeline construction on the property?

Yes \_\_\_\_\_ No \_\_\_\_\_ DK \_\_\_\_\_

b. (If yes for a) were you notified of these changes during construction? Yes \_\_\_\_\_ No \_\_\_\_\_

23a. Do you have a record of how often you checked construction procedures on your property? Yes \_\_\_\_\_ No \_\_\_\_\_

- b. (If yes for a) how often did you check? \_\_\_\_\_
- c. (If no for a) generally, how often did you check?  
never \_\_\_\_\_ few times \_\_\_\_\_ often \_\_\_\_\_  
regularly (daily) \_\_\_\_\_
- 24a. How often did you speak with the spread boss? (foreman)  
never \_\_\_\_\_ 1 time \_\_\_\_\_ 2-4 times \_\_\_\_\_ over 5 \_\_\_\_\_
- b. Why did you speak with him?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 25a. Did you have any contact with any inspectors or observers  
from the Government, or from Bechtel Canada Ltd.?  
yes \_\_\_\_\_ no \_\_\_\_\_ DK \_\_\_\_\_
- b. (If yes for a) do you recall their names or organizations?  
DK \_\_\_\_\_
- 26a. Did any unexpected problems occur on the property during  
the course of construction? yes \_\_\_\_\_ no \_\_\_\_\_ DK \_\_\_\_\_
- b. (If yes for a) name the problems.  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_
27. What steps did you or anyone else follow to look after these  
problems? (For example, contact pipeline officials,  
inspectors, contractors; repair the damage yourself.)  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_
28. Can you offer any suggestions as to why these problems  
occurred?  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_

29. Can you offer any suggestions for improving future pipeline construction procedures?

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V. RESTORATION PROCESS (CLEAN-UP)

- 30a. Has the company completed the restoration (clean-up) of your property (i.e. tile drains, topsoil replacement, contouring, brush removal, fencing, stone pick-up, seeding)?

Yes \_\_\_\_\_ No \_\_\_\_\_

- b. What is left to be completed? \_\_\_\_\_

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- c. Have you signed the 'Receipt and Release for Damages' form?

Yes \_\_\_\_\_ No \_\_\_\_\_

- d. (If no to a and yes to c) why did you sign this form?

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- 31a. Are you satisfied to date with the restoration process on your property? Yes \_\_\_\_\_ No \_\_\_\_\_ DK \_\_\_\_\_

- b. Why are you or why aren't you satisfied?

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- 32a. Do you anticipate any future problems related to this particular pipeline construction that might occur on the property?

Yes \_\_\_\_\_ No \_\_\_\_\_

- b. If unexpected problems which you feel are related to pipeline construction, occur on your property in the future, what action would you take (i.e. do you know whom to contact)?

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DK \_\_\_\_\_

33. Does IPL have a continuing program to monitor the recovery of your land? Yes \_\_\_\_\_ No \_\_\_\_\_ DK \_\_\_\_\_

34. Can you offer any suggestions for improving future pipeline restoration procedures?

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35. Do you have any additional comments to offer that have not been covered in the questionnaire?

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If Personal Interview

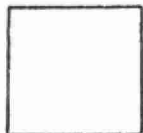
Do you wish to show me any examples of what we have talked about?

Yes \_\_\_\_\_ No \_\_\_\_\_

If Mail-In

Do you wish to be called about any lack of clarity in the questionnaire?

Yes \_\_\_\_\_ No \_\_\_\_\_



Assuming this block represents your property, could you please draw a line where the pipeline crosses the property.

During negotiations, how much land (in acres) did the pipeline company state would be utilized during construction? \_\_\_\_\_



Ontario

Ministry of the  
Environment

135 St. Clair Avenue West  
Suite 100  
Toronto Ontario  
M4V 1P5  
Wendy MacKeigan  
(416) 965-3198

I am contacting you with respect to a landowner survey that the Ministry has initiated concerning the recently constructed crude oil pipeline. Your name was given to me as the contact with whom Interprovincial and/or Bechtel officials dealt with during negotiation procedures.

The pipeline project is under Federal jurisdiction. But, at the time of the National Energy Board (NEB) Hearings on the proposed pipeline, the Government of Ontario intervened before the NEB and tabled a number of detailed requests pertaining to pipeline construction. The submission focused on the physical environment as related to the protection and restoration of agricultural land and the natural environment in Ontario. The rights of landowners along the route were also emphasized.

It is intended that this survey determine whether the issues raised by the Province at the time of our intervention before the NEB have been adequately addressed by the pipeline company and the extent to which further changes in future pipeline construction procedures will be recommended by Ontario to the Federal Government.

Because this survey involves only a random sample of landowners affected by the pipeline it is important to the statistical validity of this study that questionnaires are completed and returned. It would be appreciated if the person in your Department who is most familiar with the pipeline negotiations, construction, and restoration procedures could fill out the enclosed questionnaire as soon as possible as the study is terminating in the near future.

If you have any questions please do not hesitate to contact me at the above address. Thank you for your co-operation.

Very truly yours,

Wendy MacKeigan

LANDOWNER SURVEY

IPL - SARNIA TO MONTREAL

Borough, City, Conservation Authority, County,  
Ontario Hydro, Regional Municipality,  
Township, Landowners

General Interview

I. General Information - Spread #: \_\_\_\_\_

Landowner Name: \_\_\_\_\_

Representative  
Interviewed: \_\_\_\_\_

Representative Or Group Who Did Dealings With IPL Or  
Bechtel: \_\_\_\_\_

Main Land Use (i.e. Road Allowances): \_\_\_\_\_  
\_\_\_\_\_

Amount of Land Involved (i.e. number of roads, linear  
miles): \_\_\_\_\_

Number of IPL pipelines on property: \_\_\_\_\_

II. Negotiations 1975 Pipeline

First contacted by pipeline officials: \_\_\_\_\_

Information available on rights: \_\_\_\_\_

(continued)



Were any public meetings organized or attended?

Were any private meetings organized?

Legal Documents Prepared? (i.e. Performance Bond)

Special requests to IPL or Bechtel during negotiations

Any suggestions for improving future negotiation procedures?

Attempt at obtaining additional information

### III. Construction

Direct contact with construction company?

Utilize your own inspectors?

How often did they check?

(continued)

Did you know when construction would start?

Did you receive notice of when it would start?

With construction company-

Written Agreements:

Non-Written Agreements:

Information available on your rights as a landowner:

Requests: Were they fulfilled?

Any suggestions as to why they were not fulfilled:

Any unexpected problems occur?

If yes, why?

(continued)

Any suggestions for improving future pipeline construction procedures?

IV. Restoration

Completed?

Have you signed the 'Receipt and Release for Damages' form?

Satisfied?

Unexpected problems to occur?

Any suggestions for improving future restoration procedures?

Additional Comments:

APPENDIX E

TABLES DEPICTING QUESTIONNAIRE RESULTS, SPREADS 1 TO 6

Table 1  
Questionnaire Results

SPREAD 1-6

Did you attend any public meetings concerning the pipeline?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	61.0	32.4	18.5	16.0	23.8	30.3
No	37.0	67.6	81.5	84.0	76.2	69.3
No Response	2.0	-	-	-	-	.4
						100.0%

Did you attempt to obtain additional information about the pipeline?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	34.8	16.2	28.9	40.0	38.1	31.6
No	65.2	81.1	65.9	54.0	57.1	64.7
No Response	-	2.7	5.2	6.0	4.8	3.7
						100.0%

Was any part of your land expropriated by IPL?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	8.7	-	10.6	18.0	19.0	11.3
No	87.0	94.5	84.2	82.0	78.5	85.2
No Response	4.3	5.5	5.2	-	2.4	3.5
						100.0%

Table 2  
Questionnaire Results

SPREAD 1-6

Did you see a final plan of where the pipeline would run through your property before you signed any final agreements?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	32.7	16.2	55.3	40.0	42.8	37.4
No	58.7	67.6	42.1	48.0	47.6	52.8
Don't Know	-	-	-	-	4.8	1.0
No Response	8.6	16.2	2.6	12.0	4.8	8.8
						100.0%

Do any of the legal agreements you have signed allow IPL to construct another pipeline through the 60-foot easement on your property?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	8.6	46.0	39.6	40.0	26.1	32.1
No	71.7	27.0	31.5	40.0	54.8	45.0
Don't Know	13.2	24.3	26.3	16.0	16.7	19.3
No Response	6.5	2.7	2.6	4.0	2.4	3.6
						100.0%

Table 3  
Questionnaire Results

SPREAD 1-6

During negotiations or any time prior to construction, did IPL or their representative, Bechtel Canada Ltd. record areas on your property that needed special consideration?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	50.0	54.1	55.3	48.0	47.6	51.0
No	50.0	45.9	34.2	36.0	45.2	42.3
No Response	-	-	10.5	16.0	7.2	6.7

100.0%

Were you notified when construction would start?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	61.0	64.8	76.3	64.0	66.7	66.6
No	19.5	24.4	18.4	36.0	26.2	24.9
Don't Know	19.5	-	-	-	-	3.9
No Response	-	10.8	5.3	-	7.1	4.6

100.0%

Did the agreed upon easement and/or right-of-way change during the course of pipeline construction on the property?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	43.4	48.6	39.6	44.0	40.5	43.2
No	43.4	27.0	57.8	44.0	38.1	42.1
Don't Know	6.6	19.0	-	8.0	16.6	10.0
No Response	6.6	5.4	2.6	4.0	4.8	4.7

100.0%

Table 4  
Questionnaire Results

SPREAD 1-6

Were you notified of these changes during construction?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	20.0	33.3	15.4	4.5	21.0	18.5
No	80.0	66.7	86.6	95.5	78.6	81.5
						100.0%

Did any unexpected problems occur on the property during the course of construction?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	65.2	62.1	57.9	42.0	52.4	55.9
No	32.6	32.5	42.1	50.0	45.3	40.5
No Response	2.2	5.4	-	8.0	2.3	3.6
						100.0%

Has the company completed the restoration (clean-up) of your property (i.e., tile drains, topsoil replacement, contouring, brush removal, fencing, stone pick-up, seeding)?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	39.1	59.4	47.4	60.0	23.9	46.0
No	56.5	35.2	47.4	32.0	66.7	47.6
Don't Know	2.2	-	-	2.0	2.3	1.3
No Response	2.2	5.4	5.2	6.0	7.1	5.2
						100.0%



Table 5  
Questionnaire Results

SPREAD 1-6

Have you signed the 'Receipt and Release for Damages' form?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	47.8	54.0	50.0	28.0	21.2	40.2
No	45.6	40.6	47.4	68.0	76.2	55.6
Don't Know	2.2	-	-	-	-	.4
No Response	4.4	5.4	2.6	4.0	2.6	3.8
						100.0%

Are you satisfied to date with the restoration process on your property?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	39.1	32.4	36.8	42.0	23.8	34.8
No	56.5	54.1	55.4	40.0	69.0	55.0
Don't Know	2.2	8.1	5.2	10.0	2.4	5.6
No Response	2.2	5.4	2.6	8.0	4.8	4.6
						100.0%

Does IPL have a continuing program to monitor the recovery of your land?

	<u>Percentage Totals per Spread</u>					<u>Average Percentage</u>
Spread	1	2	4	5	6	
Yes	21.7	29.7	42.1	46.0	35.7	35.0
No	56.6	54.1	28.9	36.0	42.8	43.7
Don't Know	21.7	16.2	26.3	18.0	19.2	20.3
No Response	-	-	2.7	-	2.3	1.0
						100.0%

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